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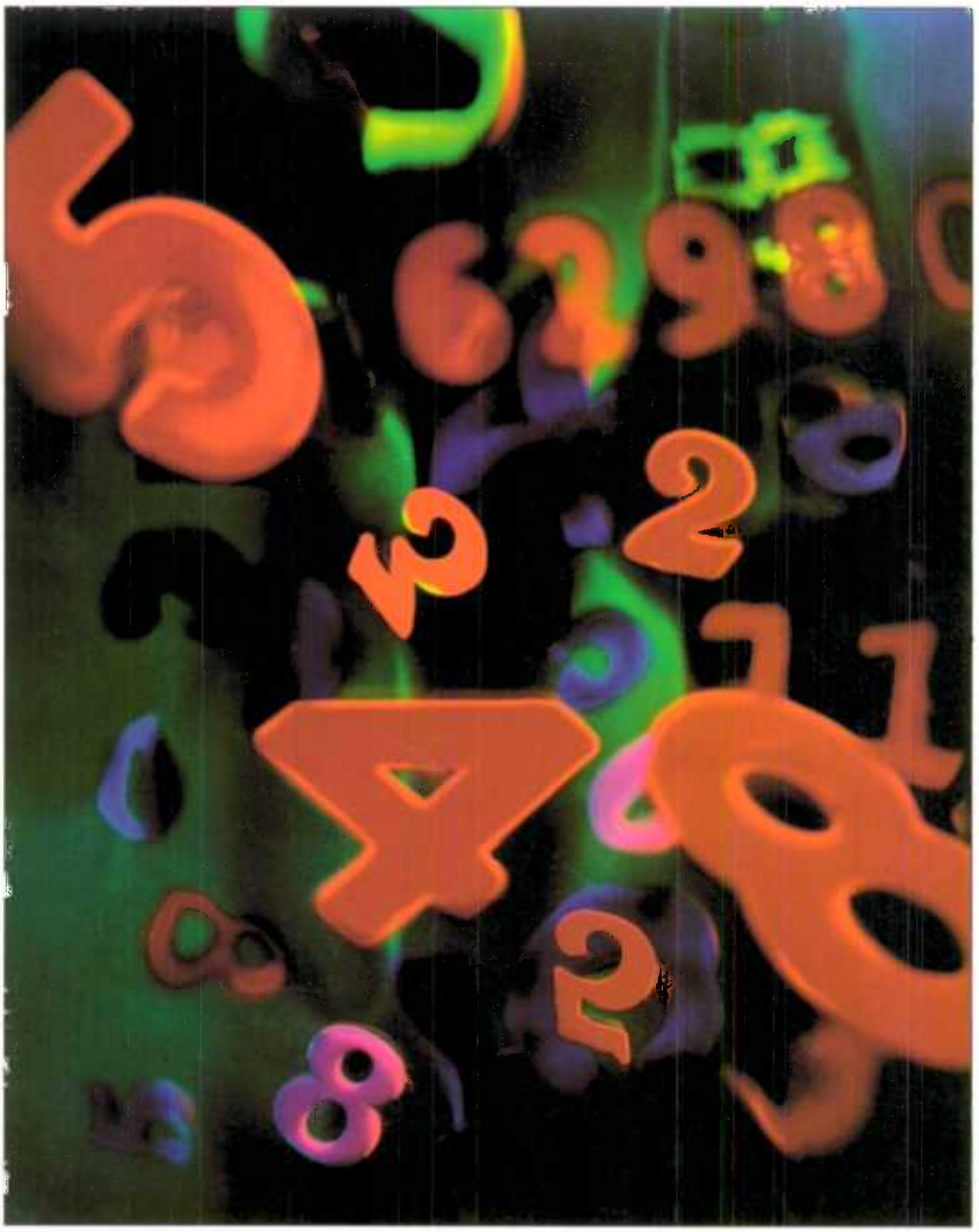
# PERSPECTIVES

## ON LABOUR AND INCOME

**AUTUMN 2001**
Vol. 13, No. 3





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Autumn 2001 Vol. 13 No. 3

# PERSPECTIVES

ON LABOUR AND INCOME

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PERSPECTIVES
ON LABOUR AND INCOME



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# Forum

*From the Managing Editor*

■ This issue's first article revisits the issue of who contributes to registered retirement savings plans. RRSPs are one of the most important financial assets of Canadians—about 40% of the total. Although men on average are more likely than women overall to contribute to an RRSP, they also typically have higher incomes. However, if the comparison is by income level, women are actually more likely to contribute to an RRSP at each level. The article also examines the effects of age and employer-sponsored pension plan coverage on RRSP participation.

As has become an annual tradition in the autumn issue, *Perspectives* once again focuses on organized labour. This year, we look at the trend in workdays lost because of labour disputes. "Time lost due to industrial disputes" examines trends in Canada since 1980. We have also produced our annual update on unionization, which now becomes part of our 'Fact-sheet' series. Because of the volume of data, only abridged versions of the tables are provided here. The complete tables are available as a free PDF file through the "Key labour and income facts" link in our online version—go to www.statcan.ca, select "Our products and services," then "In Depth," then "Perspectives on labour and income" and then "Perspectives: The online edition."

For many years now, Statistics Canada has published a widely used set of low income cutoffs (LICOs) to measure the rate of low income in Canada. While not intended for use as poverty lines, they do provide an indication of the degree of low income in various areas of the country. "Low income intensity: urban and rural families" combines the LICOs with the average depth of low income to provide a more complete measure of low income in Canada. The article uses this alternate measure to compare urban and rural families in 1993 and 1997.

Generalize or specialize—which will provide the better career path? For the most part, the debate has been philosophical. Now, the longitudinal Survey of Labour and Income Dynamics provides empirical evidence to fuel the debate. "Liberal arts degrees and the labour market" looks at bachelor's level degree holders and compares the earnings and labour market experiences of humanities and social sciences graduates with those of graduates from more vocationally oriented programs. In general, humanities and social sciences graduates seemed to take longer making the school-to-work transition and their initial earnings were lower on average. Older graduates, however, surpassed their applied programs counterparts in earnings and had more secure employment.

On the subject of the returns to education, "Employment and earnings of postsecondary graduates" explores the school-to-work experiences of college and university graduates from the classes of 1982, 1986 and 1990. Using follow-up surveys done two and five years after graduation, the study looks at the employment and earnings experiences of recent graduates in the first years of their careers.

## Key labour and income facts

The Labour Force Survey (LFS) and the Survey of Employment, Payrolls and Hours (SEPH) are perhaps the best-known of Statistics Canada's labour market surveys, but employment and payroll information is also collected by many industry-specific surveys. In this issue we spotlight 19 annual surveys covering services ranging from accounting to consulting to traveller accommodation. Though not as timely as the LFS or SEPH, the employment and earnings numbers can be combined with other financial data to provide a detailed picture of very specific industries.

As always, we welcome your comments and suggestions.

Henry Pold
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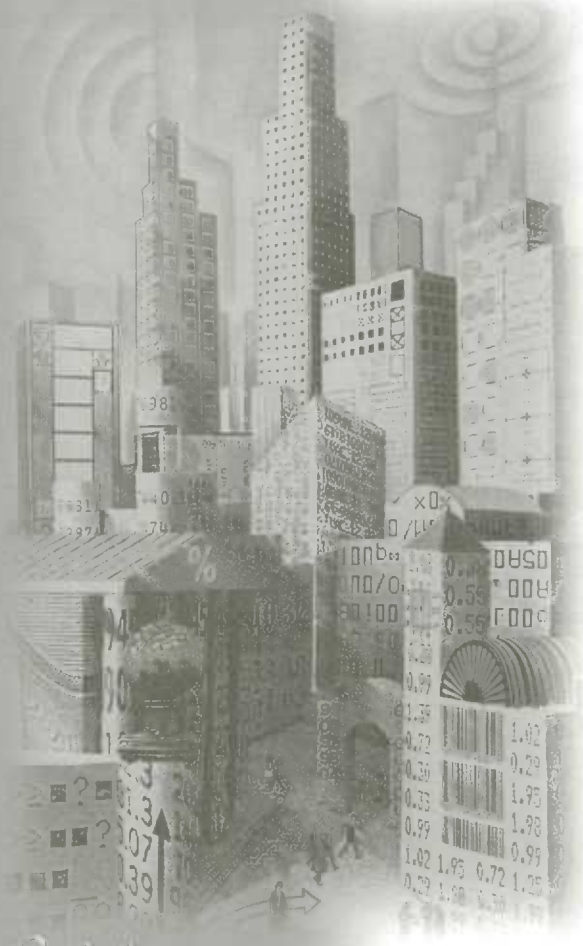

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# Highlights

*In this issue*

## Who contributes to RRSPs? A re-examination

... p. 7

- In 1999, 44.8% of men aged 25 to 64 with RRSP room made an RRSP normal contribution, compared with 37.6% of women. However, men also had higher incomes than women had. When men's and women's RRSP participation rates were compared within the same income brackets, women had higher rates in every bracket.

- RRSP participation rates were highest for people aged 45 to 54, also the age group with the highest incomes. When comparisons were made within the same income brackets, persons aged 45 to 54 had the highest participation rate only at incomes below $30,000. At higher incomes, 25 to 34 year-olds had the highest participation rate.

- People with an employer-sponsored pension plan had a higher RRSP participation rate—and higher incomes—than people without such a plan. However, comparing within the same income brackets, those with pensions had higher participation rates only at incomes below $30,000. At higher incomes, people without pension plans were the more likely contributors.

## Time lost due to industrial disputes

... p. 14

- Work stoppages and the resulting workdays lost due to labour disputes have generally declined over the past two decades. Strikes and lockouts in Canada totalled 1,028 in 1980, but dropped to 377 in 2000.

- The number of workdays lost per 1,000 employees (the time-loss ratio) fell from 953 in 1980 to 133 in 2000.

## Low income intensity: urban and rural families

... p. 17

- Despite an economy-wide expansion, low income intensity rose roughly equally for both rural and urban families between 1993 and 1997. However, the percentage growth was higher in rural areas. Low income intensity grew 13.1% in rural areas, 11.9% in small/medium urban areas, and 8.0% in large urban areas.

- Associated with the rising low income intensity was little or no increase in market income—despite a generally improving economy—and a decline in total transfer payments, especially Employment Insurance benefits received by low income families.

- Transfers to families appear to have declined by a similar percentage for both urban and rural low income families. But because rural low income families received a greater fraction of income from transfers, the change affected them more than urban families.

## Liberal arts degrees and the labour market

... p. 27

- Wage rates for applied programs graduates were about 6% higher than for humanities and social sciences graduates for both men and women. However, this wage advantage declined with age and actually reversed for those 45 and older.

- From January 1993 to December 1997, the humanities and social sciences group averaged over one week more of unemployment than the applied programs graduates did. The difference was almost entirely due to higher unemployment among humanities and social sciences men.

- The average number of job transitions during the five-year period was comparable, with the humanities and social sciences group recording slightly higher overall transition rates for both sexes.

## Employment and earnings of postsecondary graduates

... p. 34

- Postsecondary graduates at all levels from the classes of 1982, 1986 and 1990 experienced unemployment rates that were generally lower than those of non-graduates and improved significantly between two and five years following graduation.

- The average earnings of male graduates of the more recent cohorts have either held steady or shown small to moderate declines relative to earlier groups, while women's earnings have either remained stable or risen.

## What's new?

... p. 55

- **Just released**

  *Manufacturing industries of Canada: National and provincial areas, 1998*

  *Productivity growth in Canada*

  *Report on the demographic situation in Canada*

  National Income and Expenditure Accounts

  National Construction Industry Wage Rate Survey, 2000

  *Employment dynamics*

  Employment Insurance

  *Survey of Labour and Income Dynamics Public-use Microdata File, 1998*

  *Survey of Household Spending Public-use Microdata File, 1999*

  *Income prospects of British Columbia university graduates*

  *A report on adult education and training in Canada: Learning a living*

  *Education at a Glance: OECD Indicators, 2001 Edition*

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  *Extraction system of agricultural statistics*

  Farm Operators' Total Income

  *Agriculture economic statistics*

  *Farm cash receipts, January-March, 2001*

- **Upcoming conference**

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**Perspectives**

**We welcome your views** on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to Managing Editor, *Perspectives on Labour and Income*, 9th floor, Jean Talon Building, Statistics Canada, Ottawa K1A 0T6. Fax (613) 951-5113; e-mail: perspectives@statcan.ca.

# Who contributes to RRSPs? A re-examination

*Boris Palameta*

REGISTERED RETIREMENT SAVINGS PLANS (RRSPs) are one of the most important financial assets of Canadians[1] (Statistics Canada, 2001a). Previous studies have established that RRSP participation rates are heavily influenced by income, but other potentially important factors—such as sex, age, and membership in an employer-sponsored pension plan—have not been investigated thoroughly. For example, although men on average participate at higher rates than women, they also typically have higher incomes. Hence, they may be more likely than women to contribute to an RRSP simply because they have a greater capacity to do so. Indeed, at equal income levels, women are more likely to contribute (Statistics Canada, 1999).

It is useful to distinguish between capacity to contribute and incentive to contribute—one does not necessarily imply the other. For instance, members of an employer-sponsored pension plan—identified by the presence of a pension adjustment (PA) on their tax forms—are about twice as likely as those with no pension coverage to contribute to an RRSP (Akyeampong, 1999; Statistics Canada, 1999). Although having an employer-sponsored pension plan is associated with high income, and therefore a high capacity to contribute, it is not clear that this would encourage RRSP contributions. In fact, having a PA may actually discourage contributions for two reasons: a pension guarantees retirement savings, even in the absence of an RRSP; and, a PA decreases the amount of tax-deductible income that can be used to purchase an RRSP (RRSP room). People with no pension coverage might in fact participate at higher rates than those with PAs, were their capacities to contribute the same.

RRSP participation rates also increase with age, up to age 54 (Akyeampong, 2000; Statistics Canada, 1999). However, income also increases with age. This begs the question: do older people participate at higher rates simply because they have a greater capacity to do so, or because they have a greater incentive?

This paper uses 1999 tax data (the most recent year that was available) to investigate the effects of sex, pension coverage and age on RRSP participation (see *Data source and definitions*). Comparisons between men and women, between those with and without PAs, and between different age groups are made at various income levels. The analysis is restricted to taxfilers aged 25 to 64 that had RRSP room in 1999.[2] The amounts contributed are not examined.

## Women participate at higher rates than men

In 1999, some 44.8% of men aged 25 to 64 with RRSP room made an RRSP normal contribution, compared with 37.6% of women.[3] However, men also had higher incomes—only 25.7% had annual incomes below $20,000, compared with 47.2% of women; 42.5% had annual incomes of $40,000 or more, compared with only 19.5% of women.

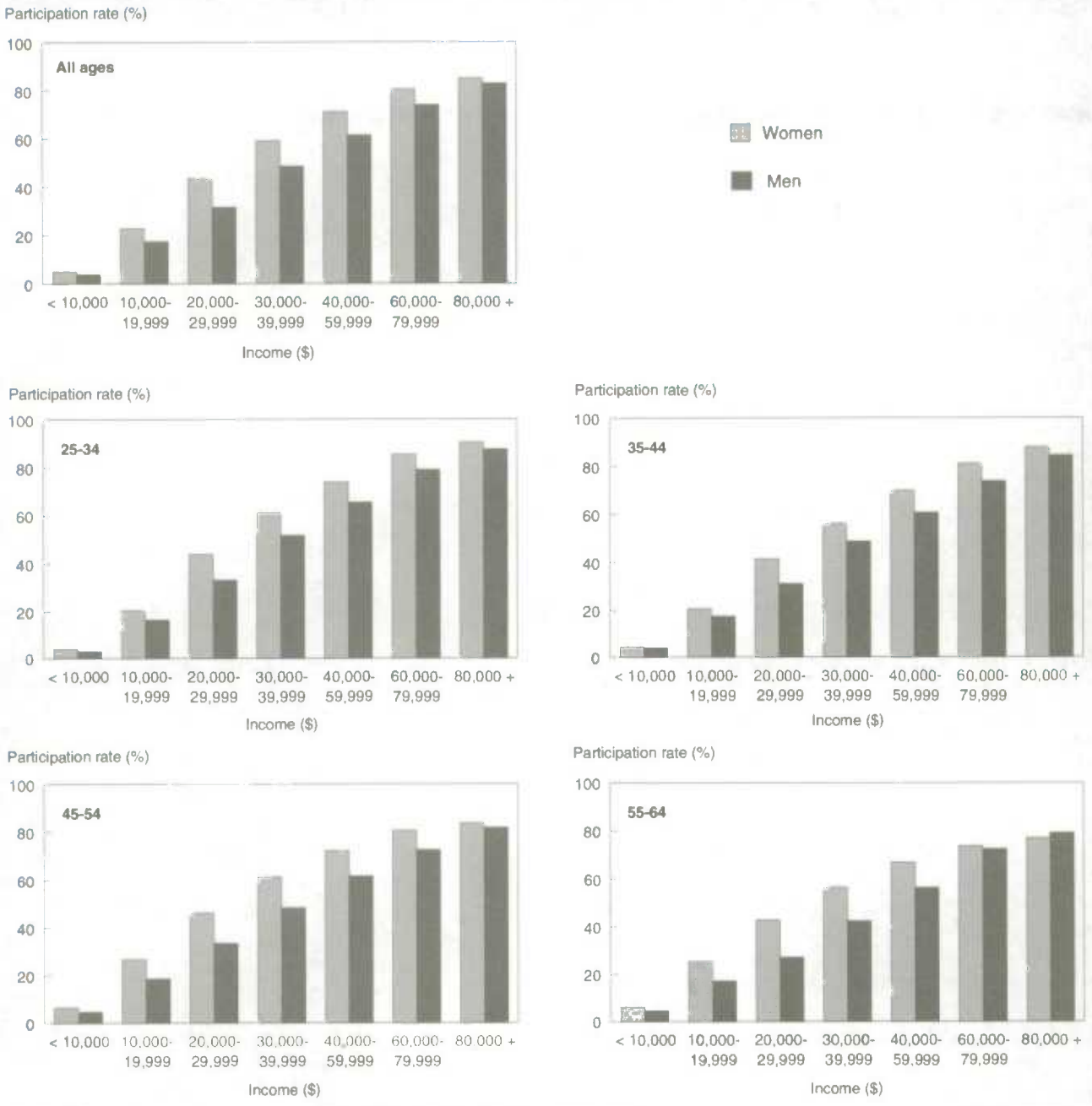
Men have a greater capacity to contribute than women do, but the playing field can be levelled by comparing men's and women's participation rates within the same income bracket. Women's participation rates were in fact higher in every income bracket (Chart A). And the pattern held when either age or PA status was factored in.[4]

For all age groups, women's participation rates exceeded men's in every income bracket, except 55 to 64 year-olds with incomes of $80,000 or more.

Women with PAs participated at higher rates than men with PAs in every income bracket (Chart B). Women without PAs also participated at higher rates than men without PAs, except those with incomes of $80,000 or more.

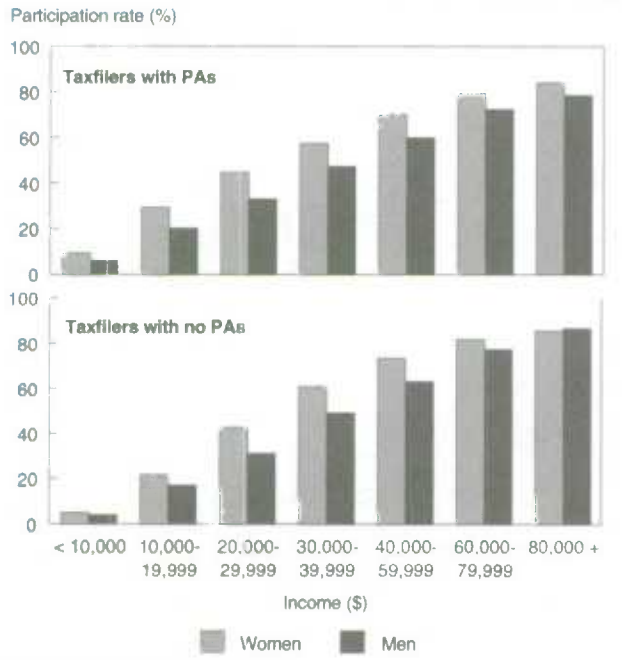
*Boris Palameta is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-2124 or boris.palameta@statcan.ca.*

**Chart A: Women participated in RRSPs at higher rates than men, in all income brackets.**




*Source: PA/RRSP file, 1999*

**Chart B: With PAs or not, women participated in RRSPs at higher rates than men.**




*Source: PA/RRSP file, 1999*

## Participation rates do not always increase with age

RRSP participation and income were both highest for people aged 45 to 54 (Table). Again, it is no surprise that the highest participation rate occurred at the age when people have the highest capacity to contribute.

**Table: RRSP participation and income, by age, 1999**

| | RRSP participation | Income | |
|---|---|---|---|
| | | < $20,000 | $40,000 + |
| | | % | |
| 25 to 34 | 37.6 | 41.5 | 21.8 |
| 35 to 44 | 42.1 | 33.9 | 33.8 |
| 45 to 54 | 46.3 | 31.6 | 38.8 |
| 55 to 64 | 37.5 | 39.8 | 29.2 |

*Source: PA/RRSP file*

When capacity to contribute was held constant by comparing age groups within the same income brackets, a somewhat different result emerged. Persons 45 to 54 had the highest participation rate at incomes less than $30,000. However, at incomes of $30,000 or more, 25 to 34 year-olds had the highest participation rate (Chart C).

A similar pattern emerged when age groups were split by sex or PA status. Men and women 25 to 34 participated at higher rates than their older counterparts in high income brackets.

Among people with PAs, the highest participation rate was found among 55 to 64 year-olds in low income brackets, and 25 to 34 year-olds in high income brackets. For those without PAs, 45 to 54 year-olds had the highest participation rate in low income brackets. In the two highest income brackets, 25 to 34 and 35 to 44 year-olds were virtually tied for highest participation rate.

## Having a PA is associated with a higher participation rate only at low incomes

People with a PA had a higher RRSP participation rate than people without a PA—58.2% compared with 33.1%. However, the majority (57.3%) of people with a PA had annual incomes of $40,000 or more, while the majority (50.3%) of those with no PA had incomes less than $20,000.

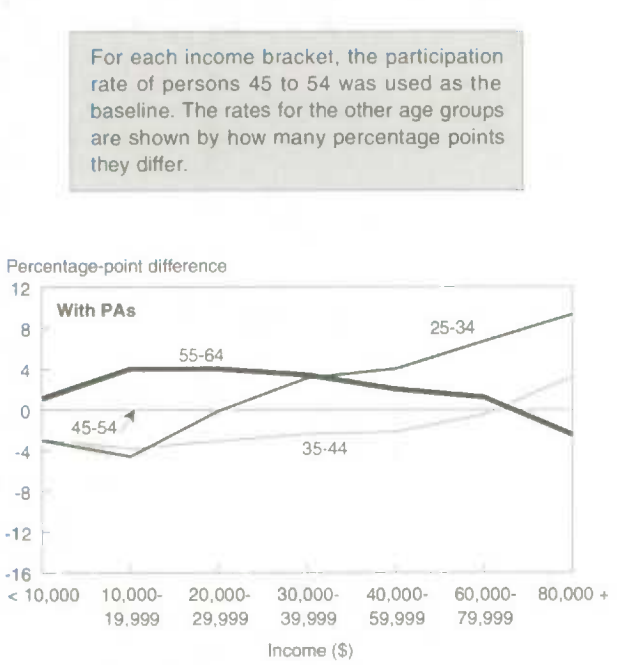
If people with no PA had the same capacity to contribute as people with a PA, would their participation rates still be lower? In fact, people with PAs had higher participation rates only at incomes below $30,000—at higher incomes, those without PAs were the more likely contributors (Chart D). This result held for both men and women and for most age groups (Chart E). An exception occurred for those 55 to 64, where having a PA was associated with greater likelihood of contribution in all income brackets except the highest.

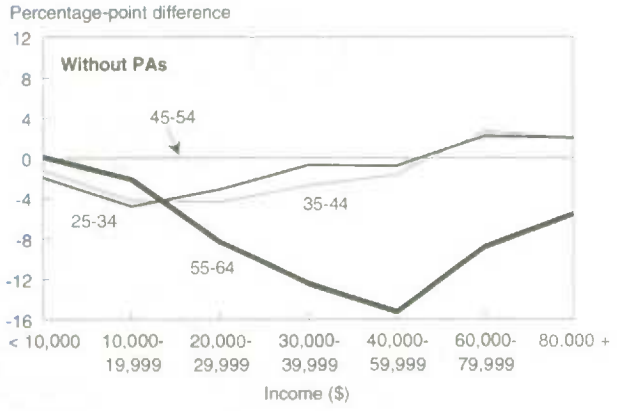
## Summary

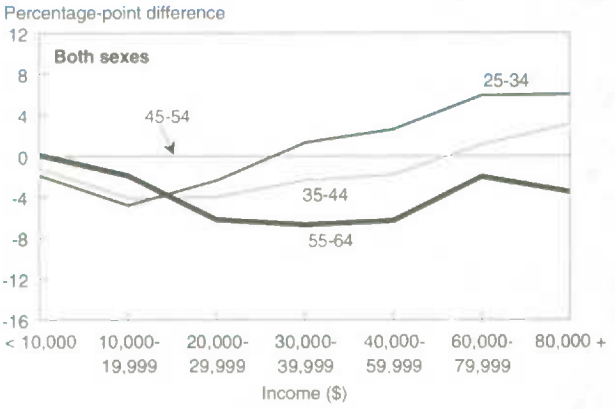
This paper shows that in order to more meaningfully assess how factors such as sex, age, and pension coverage influence RRSP participation rates, one must control for the effects of income. Overall, men participate at higher rates than women, older people participate at higher rates than young people, and people with PAs participate at higher rates than people

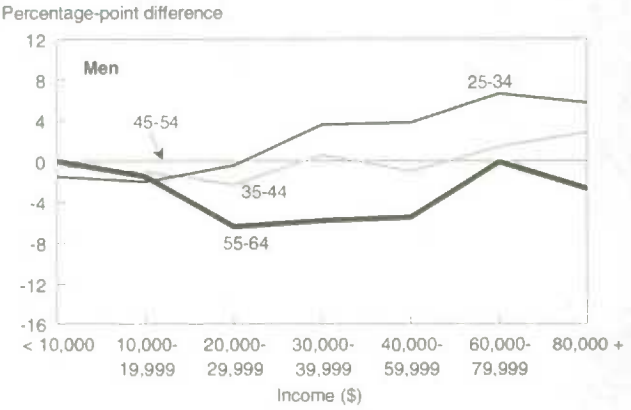
**Chart C: At high incomes, younger persons had higher participation rates.**

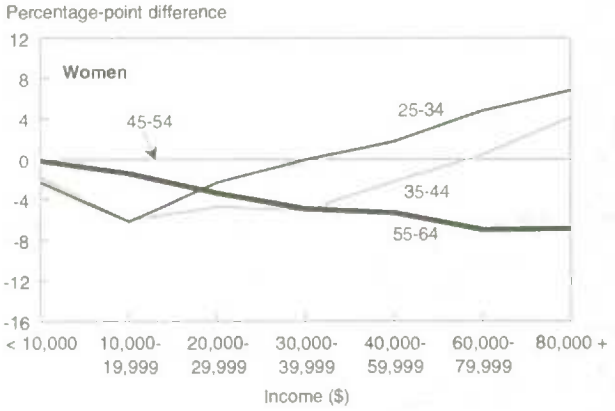
For each income bracket, the participation rate of persons 45 to 54 was used as the baseline. The rates for the other age groups are shown by how many percentage points they differ.



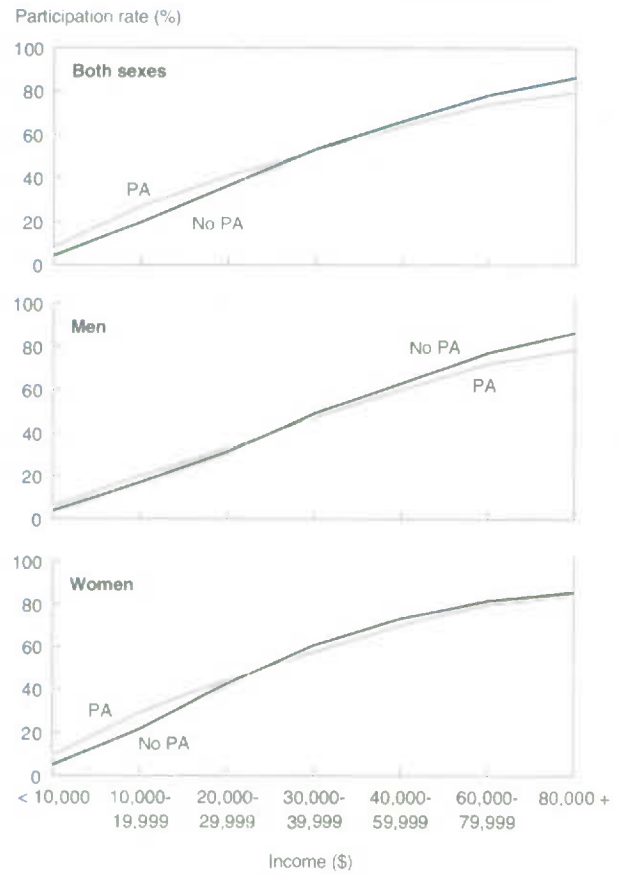




*Source: PA/RRSP file, 1999*

without PAs. However, these results are largely attributable to income differences among the groups being compared. When comparisons were made at equal income levels, women, young people, and people without PAs had the higher participation rates in most cases. Further investigation is needed to shed light on exactly why these groups may have greater incentive to participate in RRSPs.

**Chart D: At incomes above $30,000, people without PAs had higher participation rates.**




*Source: PA/RRSP file, 1999*

## Data source and definitions

This analysis complements the findings released in *Retirement Savings Through RPPs and RRSPs, 1999* (Statistics Canada, 2001b). The data originate from the PA/RRSP file, a longitudinal file on the retirement savings behaviour of each taxfiler since 1991. The analysis is limited to 1999 and uses a 2% sample of all taxfilers. Although some of the differences shown in this article are quite small, they are confirmed by the full file.

**Income**: total income as reported on line 150 of the T1 income tax form. It includes income from all sources, less losses from rental property and self-employment.

**Earned income**: the portion of total income that is used to determine RRSP room. It includes employment and self-employment income, business and rental income, and disability payments (less employment expenses such as union dues, and business and rental losses).

**Pension adjustment (PA)**: For taxfilers whose employers provide a company pension plan, a PA is calculated according to a formula prescribed by the Canada Customs and Revenue Agency. The PA varies according to the amount contributed to the pension plan by the employer and the employee. The PA must be deducted from RRSP room. The PA deduction allows people without an employer-sponsored pension plan to make higher RRSP contributions than people with the same income whose employer provides a pension plan. For a small number of high-earning employees, the PA is high enough to wipe out their RRSP room entirely—these individuals are excluded from the study.

**RRSP normal contribution**: a contribution made within the limit set by the taxfiler's current RRSP room. In rare cases, such as some retiring allowance rollovers, taxfilers are permitted to make contributions that exceed their current RRSP room. Such contributions are excluded from this analysis.

**RRSP participation rate**: the percentage of taxfilers with RRSP room who make an RRSP normal contribution.

**RRSP room**: the maximum RRSP contribution that can be deducted from income (for income tax purposes). RRSP room increases with earned income. The maximum allowable annual new room is either a dollar amount or 18% of earned income, whichever is lower. In 1999, the dollar amount was $13,500. For those with an employer-sponsored pension plan, new room is reduced by the amount of the pension adjustment. Since 1991, any unused room can be carried over for use in subsequent years.

## Notes

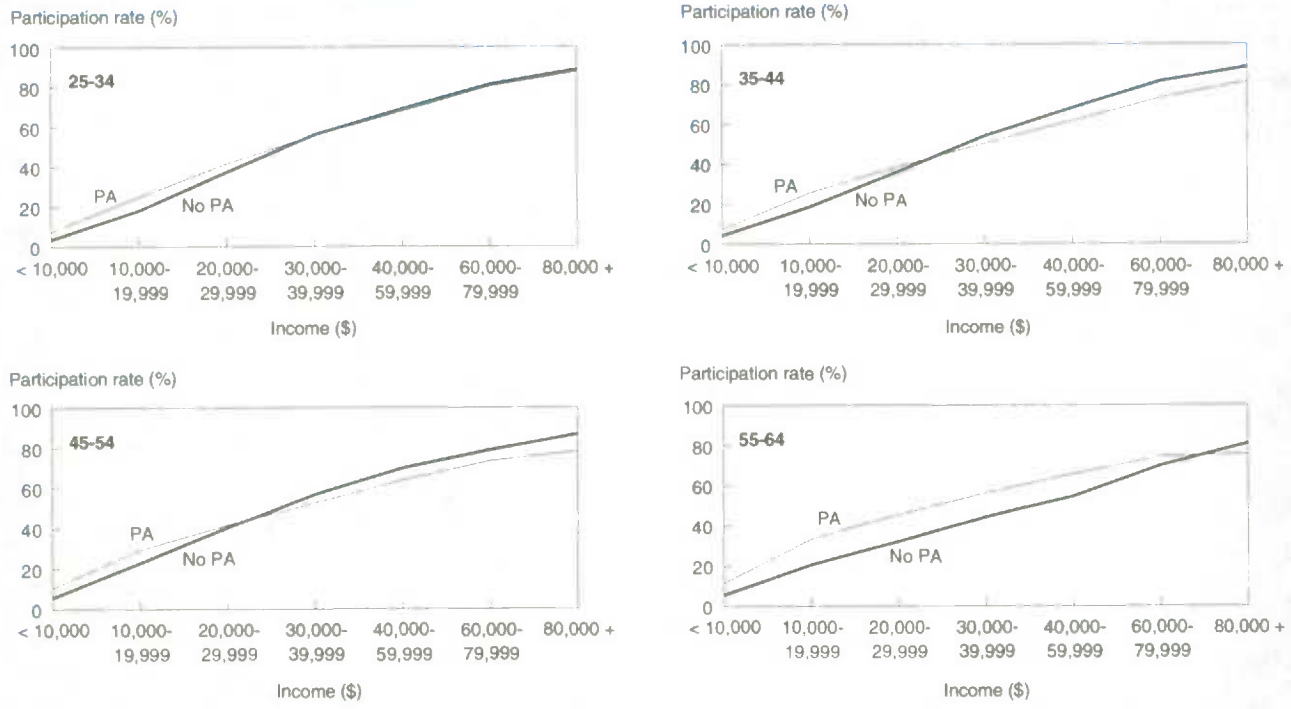
1 RRSPs constitute 40% of total *financial* assets of Canadians, outstripping other savings instruments such as deposits in financial institutions, non-registered mutual funds, stocks, and bonds. The value of employer-sponsored pension plans was *not* included in the calculation of assets.

2 People under 25 were excluded because many of them have not yet completed a transition into the labour force, while many people 65 and over have already retired.

3 In some cases, these may be spousal RRSPs, where contributions are claimed as a deduction by one spouse but are credited to the other spouse's RRSP. The PA/RRSP file does not identify these situations.

4 Comparisons that split men and women according to income, age, *and* PA status are not shown, because in many cases aggregates were too small to ensure accurate results. For example, among persons 55 to 64 in the 2% sample, only 86 women and 36 men had PAs and incomes less than $10,000.

**Chart E: Except among 55 to 64 year-olds, those without PAs had higher participation rates at incomes of $30,000 or more.**




*Source: PA/RRSP file, 1999*

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Statistics Canada. *Retirement Savings through RPPs and RRSPs, 1991 to 1997.* Catalogue no. 74F0002XPB. Ottawa, 1999.

---. *The Assets and Debts of Canadians.* Catalogue no. 13-595-XIE. Ottawa, 2001a.

---. *Retirement Savings Through RPPs and RRSPs.* Catalogue no. 74F0002XIB. Ottawa, 2001b.

## Appendix: RRSP participation rates, 1999

| Income | All ages | | | 25 - 34 | | | 35 - 44 | | | 45 - 54 | | | 55 - 64 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Both sexes | Women | Men | Both sexes | Women | Men | Both sexes | Women | Men | Both sexes | Women | Men | Both sexes | Women | Men |
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| $10,000 - 19,999 | 20.6 | 22.7 | 17.3 | 18.8 | 20.5 | 16.5 | 19.5 | 20.6 | 17.5 | 23.6 | 26.7 | 18.5 | 21.7 | 25.3 | 17.0 |
| $20,000 - 29,999 | 37.9 | 43.4 | 31.5 | 38.4 | 43.8 | 33.0 | 36.8 | 41.4 | 31.1 | 40.8 | 46.1 | 33.4 | 34.6 | 42.7 | 27.0 |
| $30,000 - 39,999 | 53.3 | 59.0 | 48.4 | 56.0 | 61.3 | 51.7 | 52.3 | 56.2 | 48.7 | 54.7 | 61.3 | 48.1 | 48.0 | 56.4 | 42.3 |
| $40,000 - 59,999 | 64.8 | 71.1 | 61.3 | 68.3 | 73.9 | 65.4 | 63.9 | 69.9 | 60.6 | 65.7 | 72.1 | 61.6 | 59.4 | 66.8 | 56.1 |
| $60,000 - 79,999 | 75.6 | 80.4 | 73.9 | 80.5 | 85.3 | 79.0 | 75.7 | 81.0 | 73.8 | 74.6 | 80.5 | 72.4 | 72.6 | 73.5 | 72.3 |
| $80,000 + | 83.1 | 85.0 | 82.7 | 88.1 | 90.5 | 87.4 | 85.2 | 87.8 | 84.5 | 82.1 | 83.7 | 81.7 | 78.6 | 76.8 | 79.0 |
| **With a PA** | | | | | | | | | | | | | | | |
| < $10,000 | 8.4 | 9.3 | 6.3 | 7.4 | | | 7.5 | | | 10.4 | | | 11.5 | | |
| $10,000 - 19,999 | 27.1 | 29.3 | 20.0 | 24.8 | | | 25.6 | | | 29.4 | | | 33.4 | | |
| $20,000 - 29,999 | 41.0 | 44.5 | 33.0 | 41.6 | | | 38.6 | | | 41.7 | | | 45.7 | | |
| $30,000 - 39,999 | 53.0 | 57.5 | 47.2 | 55.8 | * | * | 50.3 | * | * | 52.7 | * | * | 56.1 | * | * |
| $40,000 - 59,999 | 63.9 | 70.0 | 60.0 | 67.7 | | | 61.5 | | | 63.7 | | | 65.7 | | |
| $60,000 - 79,999 | 74.2 | 79.8 | 72.3 | 80.1 | | | 72.9 | | | 73.4 | | | 74.6 | | |
| $80,000 + | 79.6 | 84.1 | 78.6 | 87.4 | | | 81.3 | | | 78.1 | | | 75.6 | | |
| **Without a PA** | | | | | | | | | | | | | | | |
| < $10,000 | 4.6 | 4.9 | 3.9 | 3.6 | | | 4.3 | | | 5.5 | | | 5.6 | | |
| $10,000 - 19,999 | 19.8 | 21.7 | 17.1 | 18.1 | | | 18.7 | | | 22.9 | | | 20.8 | | |
| $20,000 - 29,999 | 36.7 | 42.8 | 31.2 | 37.3 | | | 36.0 | | | 40.4 | | | 32.1 | | |
| $30,000 - 39,999 | 53.5 | 60.8 | 49.1 | 56.1 | * | * | 54.1 | * | * | 56.8 | * | * | 44.4 | * | * |
| $40,000 - 59,999 | 66.2 | 73.3 | 63.1 | 69.0 | | | 68.1 | | | 69.8 | | | 54.6 | | |
| $60,000 - 79,999 | 78.4 | 81.8 | 77.3 | 81.0 | | | 81.5 | | | 78.8 | | | 70.0 | | |
| $80,000 + | 86.4 | 85.7 | 86.6 | 88.6 | | | 88.6 | | | 86.6 | | | 81.0 | | |

*Source: PA/RRSP file*
*Note: The overall RRSP participation rate in 1999 was 41.3%.*
* *See note 4.*

# Time lost due to industrial disputes

*Ernest B. Akyeampong*

STATISTICS ON TIME LOST due to industrial disputes (strikes and lockouts) have always attracted widespread attention. Such time losses have several ramifications: they tend to reduce overall economic output, as well as corporate and government revenues; they tend to reduce the earnings, and hence spending power, of workers directly or even indirectly involved in the dispute; and they can also lead to social unrest.

With increasing economic globalization and trade liberalization (for example, the North American Free Trade Agreement), interest in this type of information has lately assumed an added dimension, since international differences may now play a role in corporate decisions on plant or office location (see *International work-stoppage statistics*).

To offer some historical perspective on industrial strife in Canada, this study combines Statistics Canada data with information compiled by Human Resources Development Canada (HRDC, 2001) on workdays lost due to strikes and lockouts over the past two decades.

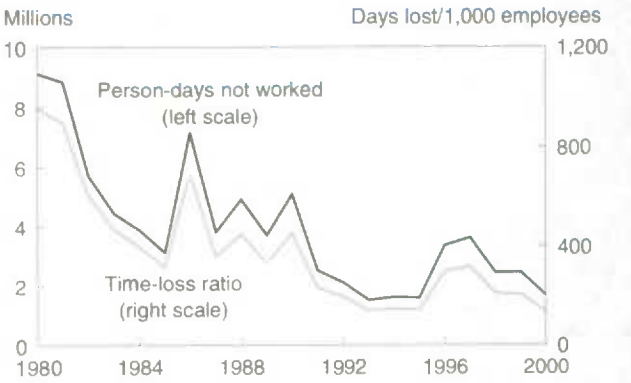
## Days lost have trended down over the past two decades

Analysis of year-over-year changes and trends in labour-dispute statistics is not straightforward. The annual data are affected by the collective bargaining timetables (in particular, the number and length of collective agreements), the size of the unions involved, the duration of the stoppages, the state of the economy, as well as any changes in industrial relations legislation.

Nevertheless, the available data for the past 20 years do reveal overall downward trends in both the number of industrial disputes and the resulting days lost (Chart). The average annual number of work stoppages in Canada due to strikes and lockouts in the 1980s was almost double that of the 1990s (754 versus 394). The resulting workdays lost averaged 5.5 million annually in the 1980s, more than double the 2.6 million of the 1990s (Table). Using a *time-loss ratio* (the number of workdays lost due to strikes and lockouts per 1,000 employees) enables a meaningful comparison of the industrial dispute statistics. The annual average ratio fell from 547 in the 1980s to 233 in the 1990s.

A comparison of the 2000 data with those of 1980 reveals an even more dramatic decline. In 1980, work stoppages due to strikes and lockouts totalled 1,028; in the year 2000, the corresponding number was just 377. Similarly in 1980, the resulting person-days not worked amounted to 9.1 million; in 2000 they totalled 1.7 million. The time-loss ratio in 1980 was estimated to be 953; in the year 2000, the corresponding figure was 133, only one-seventh the 1980 level.

**Chart: Person-days not worked due to labour disputes and the time-loss ratio have both trended down over the past two decades.**




*Sources: Human Resources Development Canada, Workplace Information Directorate; Labour Force Survey*

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**Table: Strikes and lockouts and person-days not worked**

| | Work stoppages | Person-days not worked | Employees | Time-loss ratio* |
|---|---|---|---|---|
| | | '000 | '000 | |
| 1980 | 1,028 | 9,130 | 9,584 | 953 |
| 1981 | 1,049 | 8,850 | 9,854 | 898 |
| 1982 | 679 | 5,702 | 9,443 | 604 |
| 1983 | 645 | 4,441 | 9,476 | 469 |
| 1984 | 716 | 3,883 | 9,731 | 399 |
| 1985 | 829 | 3,126 | 9,932 | 315 |
| 1986 | 748 | 7,151 | 10,323 | 693 |
| 1987 | 668 | 3,810 | 10,625 | 359 |
| 1988 | 548 | 4,901 | 10,938 | 448 |
| 1989 | 627 | 3,701 | 11,183 | 331 |
| 1990 | 579 | 5,079 | 11,241 | 452 |
| 1991 | 463 | 2,516 | 10,963 | 230 |
| 1992 | 404 | 2,110 | 10,841 | 195 |
| 1993 | 381 | 1,517 | 10,830 | 140 |
| 1994 | 374 | 1,607 | 11,076 | 145 |
| 1995 | 328 | 1,583 | 11,259 | 141 |
| 1996 | 330 | 3,352 | 11,293 | 297 |
| 1997 | 284 | 3,610 | 11,421 | 316 |
| 1998 | 381 | 2,444 | 11,715 | 209 |
| 1999 | 413 | 2,446 | 12,066 | 203 |
| 2000 | 377 | 1,662 | 12,488 | 133 |

*Sources: Human Resources Development Canada, Workplace Information Directorate; Labour Force Survey*

* *The number of workdays lost due to strikes and lockouts per 1,000 employees.*

## Workdays lost to date in 2001 have changed little from 2000

The 90 strikes and lockouts during the first five months of 2001 were less than the 207 recorded during the same period in the preceding year. The 855,000 workdays lost from the stoppages during 2001, however, were slightly higher than the 827,000 of the year before, reflecting in part longer strike durations in 2001. Ten major strikes in Newfoundland, Quebec, Ontario, Alberta and British Columbia accounted for approximately 75% of total time lost during the first five months of 2001.[1] In spite of the slightly greater work time lost in 2001, the time-loss ratio remained unchanged at around 68 in both periods because of a higher employee count in 2001.

### International work-stoppage statistics

Because of differences in definitions and statistical coverage, international comparisons of labour dispute statistics must be made with caution.

Many countries rely on voluntary notification of a dispute to a national or local government department. In Canada, the data reflect all work stoppages that come to the notice of Human Resources Development Canada's Workplace Information Directorate. Also, many countries, including Canada, do not measure work time lost at establishments whose employees are not involved in a dispute but are unable to work because of a shortage of materials supplied by establishments that are on strike.

In addition, significant differences exist between countries on the threshold used to determine whether a particular stoppage should be entered in the official records. Most countries exclude small stoppages (judged by the number of workers involved, the length of the dispute, or the number of days lost) from the statistics. In particular, the threshold for inclusion is very high in the United States (1,000 workers), and so is the threshold of 100 workdays lost in Denmark. In Canada, the threshold for inclusion is 10 or more person-days lost.

Some countries also exclude disputes in certain industrial sectors. For example, Portugal excludes public sector strikes. Several others exclude certain types of disputes: Portugal excludes general strikes from work-stoppage statistics, Japan excludes days lost in unofficial disputes, and the United Kingdom excludes so-called political work stoppages. No such exclusions exist in Canada.

Finally, the inclusion or omission of workers indirectly involved in a stoppage, namely those who are unable to work because others at their workplace are on strike, varies between countries. The United States, together with many other countries such as the United Kingdom, France and Australia, attempts to include them. Canada, along with countries such as Germany and Italy, excludes them from the statistics. A complete description of these international coverage and definitional differences is contained in "A Technical note on coverage and methodology comparability of Labour Dispute Statistics" in the British journal, *Labour Market Trends* 109, no. 4.

## Summary

Canada's record on time lost due to industrial disputes has improved over the years. The average annual number of workdays lost per 1,000 employees (the time-loss ratio) fell from 547 in the 1980s to 233 in the 1990s. Moreover, the ratio of 133 recorded in 2000 was the lowest since 1980.

## Note

1 Major strikes January to May 2001:

| Province | Workers | Workdays lost |
|---|---|---|
| Newfoundland | Hospital support staff | 24,180 |
| | Provincial general service staff | 16,900 |
| Quebec | La compagnie minière Québec-Cartier | 37,990 |
| | Camco Inc. | 17,330 |
| Ontario | Toronto District School Board | 247,000 |
| | Falconbridge Ltd., Sudbury | 43,710 |
| | McMaster University, Hamilton | 42,900 |
| | Toronto Star | 33,330 |
| Alberta | Calgary Transit | 70,200 |
| British Columbia | Coast Mountain/TransLink | 107,250 |

## References

Human Resources Development Canada. *Workplace Gazette* 4, no. 1 (Spring 2001): 40-44.

United Kingdom National Statistics Office. "International comparisons of labour disputes in 1999," *Labour Market Trends* 109, no. 4: 195-201.

For the most recent data on unionization, see the fact-sheet in this issue.

# Low income intensity: urban and rural families

*Andrew Heisz*

THIS PAPER EXAMINES low income intensity among urban and rural families for the years 1993 and 1997. Low income intensity incorporates both the more commonly known low income rate and the average depth of low income. Changes in the low income rate often understate changes in the economic well-being of low income individuals and families. By combining rate and depth information, low income intensity provides a more complete measure of low income.

The years 1993 to 1997 encompassed a period of economic growth in Canada when one might have expected some reduction in low income following the recession of 1990-1992. In real terms, the gross domestic product (GDP) grew 14% between 1993 and 1997, an average of just over 3% per year.

Despite the economy-wide expansion, the measure of low income intensity rose between 1993 and 1997 for both rural and urban families. The size of the increase was roughly equal in absolute terms for both types of families. However, since intensity was comparatively low in rural areas, its rate of growth was slightly higher—13.1% compared with 11.9% in small/medium urban areas, and 8.0% in large urban areas. Low income intensity also rose for self-employed farmers with unincorporated farms.

Underlying the rise in low income intensity were changes in market and transfer incomes. Market income for families with low income rose only slightly, or not at all, despite the growth in the economy, whereas transfers fell. Declines in transfer income were associated primarily with reduced Employment Insurance (EI) receipts. Social assistance receipts also declined, but to a lesser extent. Other transfers rose somewhat, but failed to offset these declines. EI decreases affected low income families in all provinces, but had the largest effect on rural families in the Atlantic provinces. Social assistance fell most for low income families in Ontario and Alberta.

The focus is on non-elderly families, because one objective was to look at income changes by source of income. Elderly families have a substantially different income mix than non-elderly families, which would have necessitated a different approach. Otherwise, the study encompasses all families and individuals. For convenience, individuals and families are referred to as 'families' (see *Data source and definitions*).

## Low income intensity: a more complete measure of low income

The low income rate is at best a partial indicator of low income. While it shows what fraction of the population is below a pre-determined cutoff, it does not indicate how far below they are—the low income gap. One could imagine a policy that gave money to the worst-off Canadians, but not enough to lift any recipients above the threshold. While this transfer would clearly make low income Canadians better off, it would not affect the low income rate. Low income intensity takes into account both the *rate* and the *depth* of low income (see *Low income cutoffs*).

Low income intensity is defined as the product of three factors: the low income rate, the low income gap, and the level of inequality of the gap:

$$\text{Intensity} = \text{Rate} \times \text{Gap} \times \text{Inequality}.$$

This yields a simple graphical interpretation of low income intensity—the volume of a three-dimensional box (Osberg, 2000). To make matters simpler, the third term is nearly constant in most cases, making it possible to display low income intensity in two dimensions as a function of the rate and the gap.[2]

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## Data source and definitions

Data are from the 1993 and 1997 versions of the T1 family file (T1FF), created and maintained by the Small Area and Administrative Data Division (see *T1FF and the official Statistics Canada low income estimates*). The T1FF comprises all T1 tax records filed by Canadians, grouped into families. Records for children and non-filing spouses of taxfilers are imputed from information on the taxfiler's T1. Thus, all income sources and the tax bill can be tallied for each family, along with its basic demographic profile and area of residence. The full file is large—over 29 million records in 1997—but this study uses a 10% file of randomly selected records to yield 1.2 million families in each of 1993 and 1997. Approximately 20% are rural families.

Since the analysis uses tax data, the sources of income are those normally reported on the T1 file, plus the federal Child Tax Benefit, the Goods and Services Tax (GST) or the Harmonized Sales Tax (HST) credit, provincial family benefits and provincial refundable credits. One important source of income not consistently reported on the T1 file over this period is family allowance benefits. These are non-taxable provincial and local programs targeted at families with dependent children. A number of different programs are grouped under the family allowance banner and these differ between provinces. Provincial family allowance benefits are available in this data in 1997 but not 1993. This mainly affects the incomes measured for residents of Quebec who received provincial family allowance benefits in both years. Residents of some other provinces received provincial family allowance benefits only in 1997. Because the focus of this study is on changes in low income over time, it is important that definitions of income remain the same. For residents of Quebec, this means excluding provincial family allowance benefits for 1997. Including benefits for 1997 when they cannot be measured in 1993 would introduce a bias to the changes in income of provincial families since any provincial family allowance benefits in 1997 would be measured as an increase in income. For residents of other provinces, however, this means including these benefits for 1997 since for those families they represent new programs offering additional incomes to families.

**Rural areas:** the regions outside census metropolitan areas (CMAs) and census agglomerations (CAs). CMA and CA codes have been matched to the T1FF using a postal code conversion to yield a highly accurate locational identifier.

**Small/medium urban areas:** CMAs or CAs with less than 500,000 residents.

**Large urban areas:** CMAs or CAs with more than 500,000 residents.

**Market income:** total earnings (from paid employment or self-employment), investment income, retirement income (private pension plan) and "other income." It excludes government transfers.

**Government transfers:** all direct payments to individuals and families by the federal, provincial and municipal governments: Old Age Security pensions, the Guaranteed Income Supplement, Spouse's Allowance, Canada and Quebec Pension Plan benefits, Child Tax Benefits, Employment Insurance benefits, workers' compensation benefits, credits for the GST/HST, provincial or territorial refundable tax credits, social assistance payments and other government payments. For all provinces except Quebec this included provincial family allowance benefits. These benefits were excluded for Quebec because of data unavailability for 1993.

**Total income**: income from all sources before deduction of federal and provincial taxes, that is, market income plus government transfer payments.

**Income tax:** total federal and provincial taxes on income and capital gains in a given year.

**After-tax income:** total income minus income taxes.

The overall level of low income intensity increased between 1993 and 1997 (Chart A). Over the period, low income intensity rose by 9.9% (Table 1). A substantial fraction of this rise was due to an increase in the low income gap. Roughly speaking, the growth in low income intensity equals the growth in the low income rate plus the growth in the gap. Thus, about one-third of the rise in low income intensity was due to an increase in the gap, the remainder due to an increase in the rate.

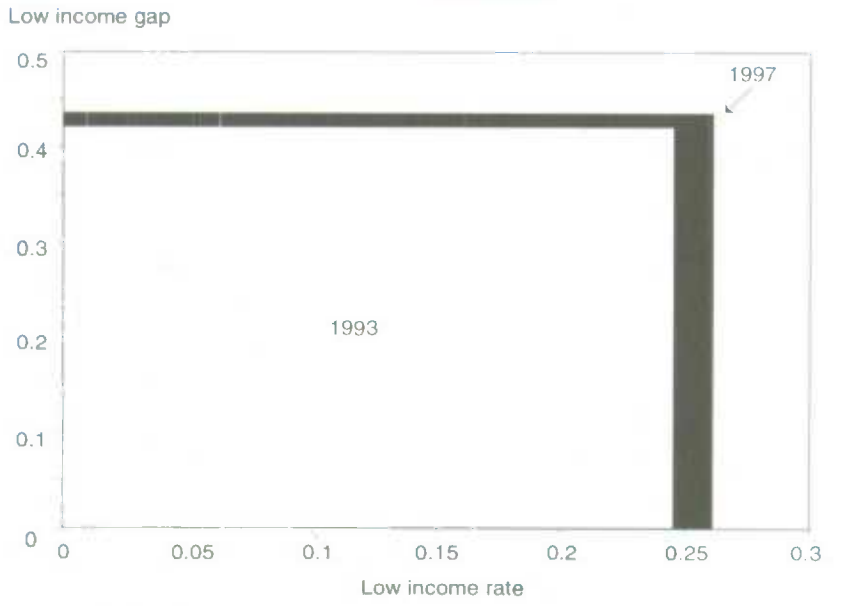
**Table 1: Low income rate, gap and intensity**

| | Rate | Gap | Intensity |
|---|---|---|---|
| 1993 | 0.245 | 0.422 | 0.191 |
| 1997 | 0.262 | 0.437 | 0.210 |
| Change (%) | 6.8 | 3.5 | 9.9 |

*Source: T1 Family File*

What lay behind the increase in low income intensity? Did low income families receive less income from market sources, or did transfers decline?[3] This can be answered by considering changes in incomes by source for the population of families at risk of being in low income—that is, families whose market incomes were below the low income cutoff based on income after tax (LICO-IAT). These 'low market income families' are families whose income from market sources does not surpass the cutoff—although some of these families may not be in low income after income from transfers is factored in. Changes in the amount and composition of income for this group shed light on

**Chart A: Overall, low income intensity increased between 1993 and 1997.**




*Source: T1 Family File*

the relative contribution of market and transfer incomes to the low income rate and gap, and hence low income intensity.

After tax income fell by $1,300 between 1993 and 1997 for families with low market income (Table 2). The largest contributor to this decline was the $1,100 drop in EI benefits received by these families. Social assistance also fell (-$500), whereas other transfers rose slightly. Market earnings were virtually unchanged. The lack of increase in market earnings is surprising given the GDP growth enjoyed over this period, and suggests that families not in low income benefited more from this growth.

**Table 2: Average income of individuals and families with market income below LICO-IAT**

| | Market earnings | EI benefits | Social assistance | Other transfers | Taxes | After tax income | LICO-IAT |
|---|---|---|---|---|---|---|---|
| | | | | $ | | | |
| 1993 | 5,613 | 1,983 | 3,351 | 2,406 | 546 | 12,807 | 16,716 |
| 1997 | 5,652 | 872 | 2,867 | 2,500 | 396 | 11,494 | 16,732 |
| Change | 39 | -1,111 | -485 | 94 | -149 | -1,313 | 16 |

*Source: T1 Family File*

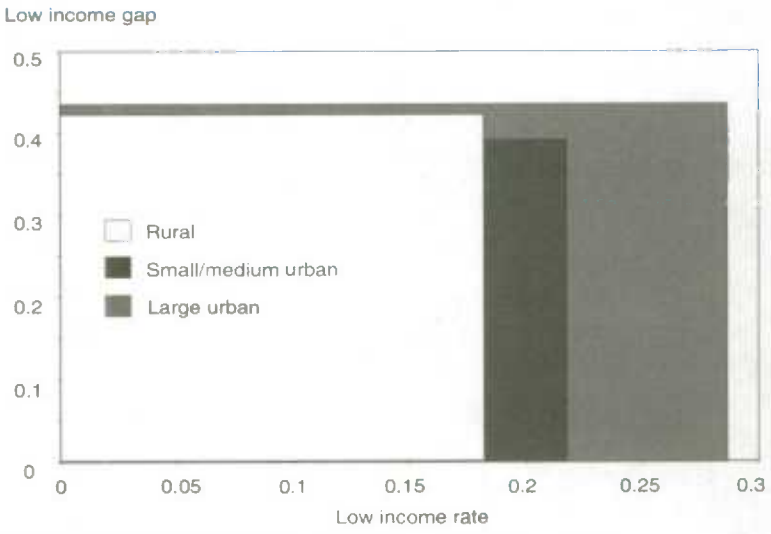
The preceding discussion shows that low income intensity is useful for two reasons. First, it is a more complete indicator of income deprivation among low income families than the traditional 'head-count' represented by the low income rate. The rate tells only part of the story, and important changes in incomes among low income families can be missed by focusing only on changes in the rate. Second, low income intensity can be useful for evaluating programs targeted at low income Canadians. Changes in the economic well-being of low income families may be missed by the low income rate, but they are always registered in measures of low income intensity (see also Myles and Picot, 2000).[4]

## Low income intensity among rural and urban families

In 1993, low income intensity was lowest in rural communities at 0.145 (Table 3), and rose with urbanization class. In large urban areas, low income intensity was 0.226 (Chart B). Why this difference? Mainly, it occurred because the low income rate was higher in more urbanized areas. The low income rate was 0.182 in rural areas and 0.286 in large urban areas. There was much less difference in the low income gap. The average family in low income was 42.2% below the LICO-IAT in rural areas, and 43.5% below in large urban areas. Smaller urban areas had a lower gap than either the large urban or rural areas, but their low income rate fell between the two. The difference in low income rates between community sizes was primarily due to differences in expenditures on necessities (see *Comparing rural and urban Canadians).*

In absolute terms, low income intensity grew almost equally between 1993 and 1997 in each community size: 1.9 percentage points in rural areas, 1.9 points in small/medium urban areas, and 1.8 points in large urban areas (Chart C). However, since rural areas were growing from a smaller initial level, their percentage growth was higher: 13.1%, compared with 11.9% in small/medium urban areas, and 8.0% in large urban areas. These increases were driven in part by a rise in the low income rate, plus an increase in the low income gap. In rural areas and small/medium urban areas the increase in the rate was more important; in large urban areas increases in the rate and the gap played approximately equal roles. Again, increases in the low income rate understated the size of increases in the income deprivation faced by low income families. Over the 1993-to-1997 period, the low income population not only increased, but it also became economically worse off—which would not have been apparent from the low income rate.

**Chart B: In 1993, low income intensity was greatest in large urban areas.**




*Source: T1 Family File*

**Table 3: Low income among non-elderly families, by area size**

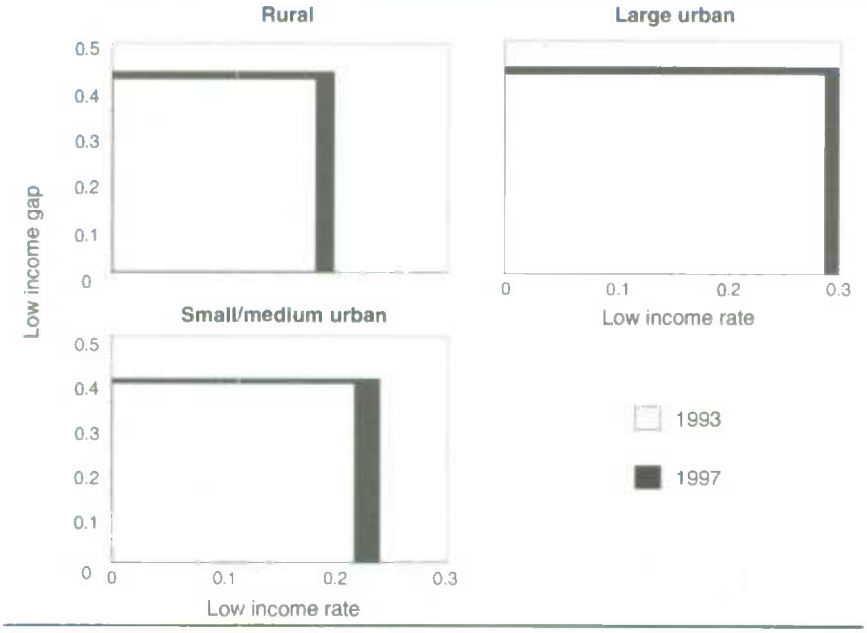
| | Rate | Gap | Intensity |
|---|---|---|---|
| **Rural** | | | |
| 1993 | 0.182 | 0.422 | 0.145 |
| 1997 | 0.199 | 0.438 | 0.164 |
| Change (%) | 9.3 | 3.8 | 13.1 |
| **Small/medium urban** | | | |
| 1993 | 0.217 | 0.393 | 0.160 |
| 1997 | 0.240 | 0.403 | 0.179 |
| Change (%) | 10.6 | 2.5 | 11.9 |
| **Large urban** | | | |
| 1993 | 0.286 | 0.435 | 0.226 |
| 1997 | 0.299 | 0.451 | 0.244 |
| Change (%) | 4.5 | 3.7 | 8.0 |

*Source: T1 Family File*

## Income by source

Low income intensity rose for both urban and rural families between 1993 and 1997. How did incomes change over the period? Net income for low market income families fell by $1,800 in rural areas, $1,500 in small/medium urban areas, and $1,000 for families in large urban areas (Table 4). The largest single contributor to the decline was a large drop in EI benefits. These fell by $1,600 for rural families, by $1,100 in small/medium sized urban areas and by $900 in large urban areas. At the same time, average market earnings failed to rise substantially, despite increases in aggregate real GDP. Real market earnings fell by $200 for low market income families in rural areas and small/medium urban areas, but rose marginally ($200) in large urban areas.

**Chart C: Between 1993 and 1997, low income intensity increased in all size regions.**




*Source: T1 Family File*

income intensity rose for these families between 1993 and 1997 (Table 5). Low income intensity rose less for farm than non-farm families, but, because of its lower initial rate, the percentage growth was about the same. For farm families, rising low income intensity was associated with declines in EI and market income (Table 6).[5]

## Provincial differences

Social assistance falls under provincial and local jurisdiction and these programs differ substantially in terms of eligibility and benefit rates. And eligibility for EI depends upon local unemployment rates, which differ between and within provinces.

Declines in EI income were most important for rural low market income families, particularly those in the Atlantic provinces, as

Social assistance also declined, particularly in urban areas. Although other transfers did increase, the amounts were not large enough to offset the declines in EI and social assistance. Total transfers fell about equally in percentage terms for each type of area: 20% in rural areas, 17% in small/medium urban areas, and 20% in large urban areas. Because transfers made up a larger part of net income for low market income families in rural and small/medium urban areas, the same proportional decrease in transfers had a larger effect on net income for these families.

## Farm families

Farm families are those with more than $10,000 of gross income from unincorporated farms. Low

**Table 4: Average income of individuals and families with market income below LICO-IAT**

| | Market earnings | EI benefits | Social assistance | Other transfers | Taxes | After tax income | LICO-IAT |
|---|---|---|---|---|---|---|---|
| | | | | $ | | | |
| **Rural** | | | | | | | |
| 1993 | 4,360 | 2,870 | 2,969 | 2,832 | 486 | 12,545 | 13,084 |
| 1997 | 4,123 | 1,277 | 2,677 | 2,947 | 276 | 10,748 | 12,874 |
| Change | -237 | -1,593 | -292 | 115 | -210 | -1,797 | -210 |
| **Small/medium urban** | | | | | | | |
| 1993 | 5,079 | 1,916 | 4,007 | 2,597 | 493 | 13,106 | 15,614 |
| 1997 | 4,914 | 855 | 3,497 | 2,686 | 335 | 11,617 | 15,476 |
| Change | -166 | -1,061 | -510 | 89 | -158 | -1,489 | -138 |
| **Large urban** | | | | | | | |
| 1993 | 6,379 | 1,673 | 3,156 | 2,140 | 596 | 12,752 | 18,705 |
| 1997 | 6,584 | 730 | 2,622 | 2,242 | 471 | 11,707 | 18,782 |
| Change | 204 | -943 | -534 | 102 | -125 | -1,045 | 77 |

*Source: T1 Family File*

### Low income cutoffs

Low income cutoffs (LICOs) were established using data from the Family Expenditure Survey, which covered approximately 14,000 households. It was conducted periodically from 1955 to 1996 when it was replaced by the annual Survey of Household Spending. Between surveys, low income cutoffs were adjusted for inflation using the consumer price index.

This study uses 1992 LICOs based on income after tax (LICO-IATs) to measure low income. These are defined as the after-tax income level at which an economic family spends 20% more than the average family of similar size and area of residence (urbanization) on necessities (food, shelter and clothing). Although LICOs are often referred to as poverty lines, they have no official status as such, and Statistics Canada does not recommend their use for this purpose.[1]

LICO-IATs are based on family size and urban class. For example, in 1993 for a family with three members, the LICO-IAT was $13,773 in rural areas and $21,007 in large urban areas. The difference arises because the average three-person family in a large urban area spends a higher fraction of its income on necessities. Persons with after-tax income below the LICO-IAT for their family size and area size class are defined to be in low income.

**Table 5: Low income among farm families**

| | Rate | Gap | Intensity |
|---|---|---|---|
| 1993 | 0.113 | 0.260 | 0.057 |
| 1997 | 0.119 | 0.277 | 0.064 |
| Change (%) | 5.3 | 6.5 | 12.3 |

*Source: T1 Family File*

well as in Quebec and British Columbia (Chart D). EI declined for other provinces and areas, but substantially less (relative to the LICO-IAT). In the Atlantic rural areas, EI dropped by 20.5% of the LICO-IAT in Prince Edward Island, 19.0% in Newfoundland, 16.4% in New Brunswick, and 8.5% in Nova Scotia.

Declines in social assistance income were most important for low market income families in Ontario, Alberta and British Columbia. Compared with changes in EI, changes in social assistance were smaller and less differentiated by area, although declines appeared slightly smaller the larger the urban area. Social assistance rose in Newfoundland, but changed little in other provinces. Social assistance fell by 4.2% of the LICO-IAT in rural Ontario, 4.1% in rural Alberta, 3.4% in rural British Columbia, 4.3% and 3.3% in small/medium urban areas in Ontario and Alberta respectively, and 3.2% in large urban areas in Ontario. Other declines were less than 3%. The introduction of family allowance in British Columbia served to offset declines in social assistance.[6] Also, market incomes fell or rose very little in most provinces, except Alberta (up $400).

## Why do changes in transfers affect rural low-income families more?

In all communities, increases in low income intensity were associated with little increase in market income and declining transfer payments. Changes in transfers particularly affected rural low income families. For all levels of after tax income, families in rural communities received a larger proportion from transfers than families in large urban areas (Chart E). And, at the levels of income given by the LICO-IATs, a rural family received a 60% larger proportion of income from transfers than did a family in a large urban area. This is because of differences in both the cutoff level and the average fraction of income received from transfers at all levels of income. The former appears to have been more important.

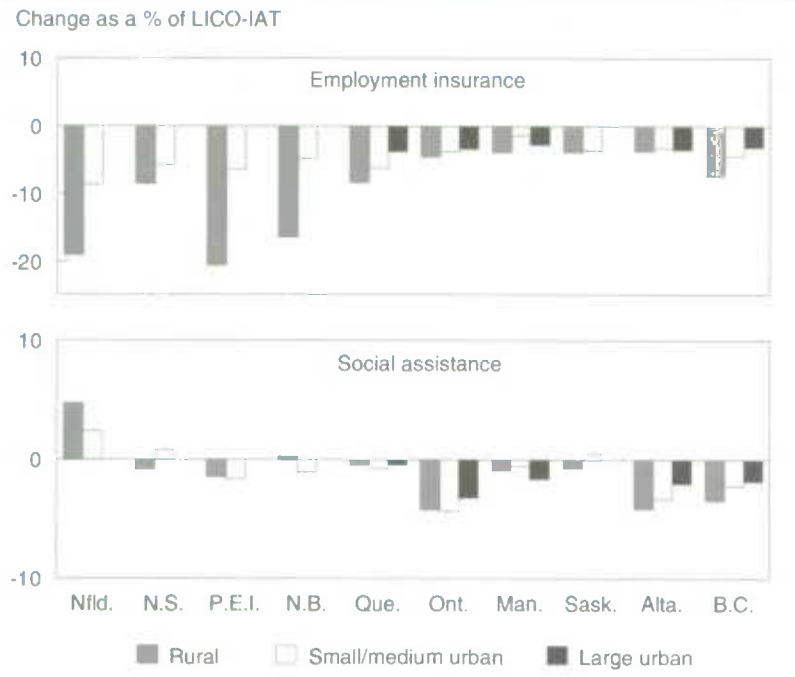
This means that, other things being equal, for a given change in transfers, low income families in rural areas were affected more than those in urban areas. This

**Table 6: Average income of farm families with market income below LICO-IAT**

| | Market earnings | EI benefits | Social assis-tance | Other transfers | Taxes | After tax income | LICO-IAT |
|---|---|---|---|---|---|---|---|
| | | | | $ | | | |
| 1993 | 10,494 | 1,519 | 226 | 3,712 | 279 | 15,673 | 16,279 |
| 1997 | 10,192 | 752 | 142 | 3,873 | 259 | 14,700 | 16,192 |
| Change | -302 | -767 | -85 | 161 | -20 | -973 | -87 |

*Source: T1 Family File*

**Chart D: EI declines affected the Atlantic provinces the most.**




*Source: T1 Family File*
*Note: Changes in these transfers have been standardized by dividing them by the average LICO-IAT observed in the two years (1993 and 1997). Thus, values given are the change in transfer income received as a fraction of the low income cutoff for an average family with low market income.*

was more because of differences in the level of the low income cutoffs, and less because rural families were more dependent on transfers (at any given level of income).

## Conclusion

Low income intensity is a useful indicator for describing trends in low income. Unlike the low income rate, it is sensitive to changes in the amount of income received by low income families, not just whether or not they fall below a low income threshold. From 1993 to 1997, low income intensity showed larger increases in low income than did the low income rate. The increases in low income were related to a decline in transfers received by low income families. But the decline in transfers was only half the story. Also important was the slow growth in market earnings despite a generally improving economy.

In absolute terms, low income intensity increased equally for rural and urban families between 1993 and 1997. However, since it was growing from a lower base, the percentage growth was higher in rural areas. Associated with the rising low income intensity was little or no increase in market income and a decline in total transfer payments, especially EI benefits received by low income families. Transfers to families appear to have declined by a similar percentage for both urban and rural low income families, but because the latter received a greater fraction of income from transfers, the change affected them more than urban families. Low income intensity also rose for rural farm families. The EI shortfall was greatest in the Atlantic provinces, while social assistance dropped the most in Ontario, Alberta and British Columbia. Market earnings rose for families in Alberta and transfers from other sources (mainly family allowance benefits) rose for British Columbia families.

The ability to identify the importance of EI or social assistance in this change in low income intensity is limited in this study, and no conclusions can be drawn regarding the effect of changes in these programs on low income intensity. The analysis of the effect of all transfers is done in a 'first order' sense only, and this paper does not try to account for behavioural responses (possibly significant) to changes in a program.[7]

The years 1993 to 1997 reflected sluggish, but improving, economic conditions. Between 1993 and 1997, the unemployment rate fell from 11.4% to 9.1%.[8] As economic conditions improve, transfer payments could normally be expected to decline and market incomes to rise. However, the latter did not happen for families in low income. Nevertheless, the length of recession and the slow pace of recovery suggests that exhaustion of EI benefits and difficulty obtaining the minimum hours of work required to qualify for EI might have been an ongoing problem. In other words, the drop in EI received by low income families may have been due to a change in the program, or it might have happened even in the absence of changes to EI.[9] Atlantic Canadians in particular had difficulty meeting minimum entrance requirements and were more likely to exhaust benefits in 1997 (HRDC, 1998b).

## T1FF and the official Statistics Canada low income estimates

Low income rates computed using the T1 Family File (T1FF) compare favourably with those using the Survey of Consumer Finances (SCF). Low income rates computed using the T1FF tend to be about 5 percentage points higher, but otherwise fit closely with official rates. On average, changes in low income rates in the T1FF between 1993 and 1997 understated those in the SCF, T1FF growth rates being about 40% lower. In terms of ranking and qualitative comparisons, changes in low income rates also compared well between the T1FF and the official series.

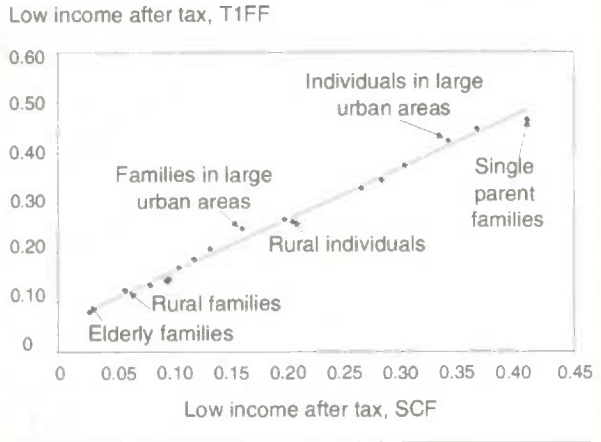
One reason for the higher T1FF rates may be differences in family structure used by the two surveys. The T1FF uses **census families**, which comprise a couple and any unmarried children living in the same dwelling unit, or a lone parent with unmarried children. The SCF uses the **economic family**, which is a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption. Economic families may comprise two or more census families. Census families will tend to be smaller, and to have lower income.

A second reason is coverage. The SCF excludes the population on reserves, in the military, and in institutions, while the T1FF does not.

A third possibility is that the grouping of families into urban size classes may be slightly different between the two sources.

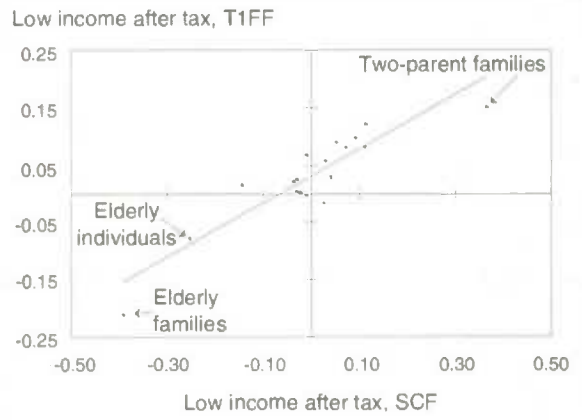
Although the rates are higher using the T1FF, the relative ranking of different family types and urbanization areas suggests that these rates are reasonable. This is particularly true for the purposes of this study, where the main interest is in examining changes over the 1993 to 1997 period, rather than discussing differences in levels.

**Incidence of low income, 1997**




*Note: Only selected family types have been highlighted.*

**Change in incidence of low income, 1993 to 1997**




*Note: Only selected family types have been highlighted.*

Other research has shown that the slow growth and program changes may both have played roles over this period. Between 1994 and 1997, low income intensity also rose in the United States. Provincial and state jurisdictions that saw less deterioration in macroeconomic conditions (like employment and unemployment), and unemployment insurance and social assistance benefits and eligibility over this period saw a smaller rise in low income (Osberg, 2000).

Equally as interesting as understanding why transfers fell for low income families in 1997 relative to 1993 is understanding why market incomes among low income families failed to rise in response to (slow) economic growth. Aggregate growth seen between these years appears not to have benefited families below the low income cutoffs. This is important because escaping from low income depends, in part, on finding employment. Getting or losing a job or a change in the number of earners in a family tends to have a major influence on moving in or out of low income (Picot, Zyblock and Pyper, 1999). Furthermore, small changes in the unemployment rate when unemployment is high may do little to affect the employment probabilities of low income persons. Just as persistently low unemployment in the 1990s contributed to

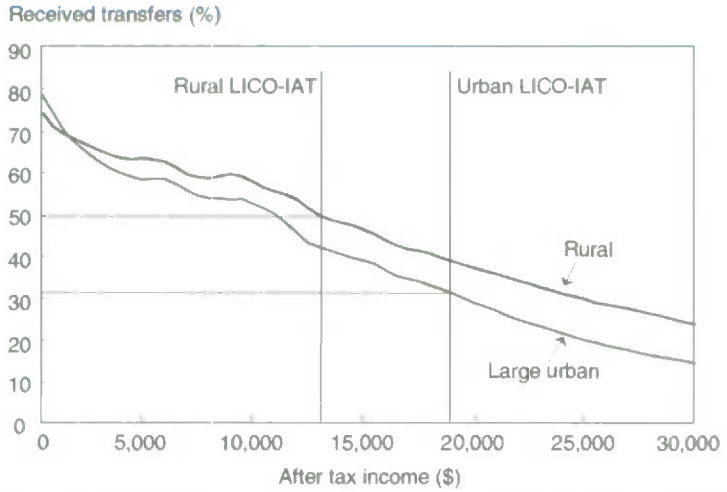
## Comparing rural and urban Canadians

Families are defined as in low income when their after tax income falls below the low income after tax cutoff line (LICO-IAT) for families of the same size and urban class. These cutoffs rise with family size and urbanization (see Catalogue no. 13-592-XIB). Because larger families spend more on necessities than smaller families, they require more income to exceed the cutoff. And, on average, urban families spend more of their income on necessities. The distributions of incomes for urban and rural families are nearly identical in the lower half of the scale, so low income rates are higher in large urban areas not because incomes are lower there, but because expenditures on necessities—particularly shelter—are higher. Hence the cutoff is higher for this group, and in turn, the fraction of families falling below the cutoff is greater (Heisz, 2001).

One common criticism of the LICO methodology is that it focuses on gross expenses for food, shelter and clothing, which will differ between rural and urban Canada because of price differences, quality differences and quantity differences. Hence, the low income population in different urbanization classes may not have the same standard of living. Differences between groups may be over or under stated using different low income measures. This is one motivation for the move towards establishing a "market basket measure" of low income (HRDC, 1998a). For this reason, this paper highlights changes in low income over time, and not differences between groups.

Some analysts have also criticised the methodology underlying the computation of the LICOs for making differences between urban and rural LICOs too large (for example, Wolfson and Evans, 1989). However, using LICO-IATs that are closer together shows that the main conclusions are not affected by the amount of difference in the LICOs (Heisz, 2001).

**Chart E: For virtually all levels of income, transfer payments were more important for rural families.**




*Source: T1 Family File*

improving the earnings of Americans at the bottom of the wage distribution (Mishel, Bernstein and Schmitt, 2001), several consecutive years of sustained growth and low unemployment—from 1997 through (at least) 2000—may serve to improve the market earnings of low income families in Canada.

## Notes

1 For a detailed explanation, see "On poverty and low income," by I.P. Fellegi (Catalogue no. 13F0027XIE). This article is available on Statistics Canada's website (www.statcan.ca), under "Products and services," "Research papers (free)," "Personal finance and household finance."

2 Inequality is defined as 1 + G(X) where G(X) is the Gini coefficient of low income gaps. The Gini is a measure of inequality that ranges between zero and one, getting closer to one as inequality becomes higher. In terms of inequality in the gap, most families have a gap of zero, so empirically, G(X) is usually close to one—a relatively few families compose most of the low income gap. Families above the low income cutoff have gaps set to zero. Thus 1 + G(X) is close to two in most cases. Low income intensity is proportionate to the product of the rate and the gap. The low income gap is the average ratio of the income shortfall to the LICO-IAT for low income families.

3 Changes in taxes are also possible contributors.

4 Myles and Picot examined low income intensity among families with children. They used a different data source, but also found an increase in low income between 1993 and 1996, as a result of no increase in market earnings and decreases in EI and social assistance.

5 Farmers cannot qualify for EI on the basis of their farm income. EI for farm families must be associated with off-farm income by family members.

6 The British Columbia Family Bonus is a refundable tax credit commencing in July 1996 that extends the child tax benefit for residents of British Columbia. Provincial family allowance benefits for Alberta and New Brunswick are also included for 1997.

7 Changes to the UI/EI system from 1993 to 1997 include Bill C-113 (effective April 4, 1993) after which quits became disqualified from benefits; Bill C-17 (effective July 7, 1994) which raised the variable entrance requirement and raised the replacement rate for low earning claimants and claimants with families while lowering it for others; and Bill C-12 (effective July 1, 1996) which renamed UI to EI, introduced a declining scale of replacement rates for repeat users, and dropped maximum insurable earnings from $845 to $750.

8 Real GDP growth was: 1993: 2.3%, 1994: 4.7%, 1995: 2.8%, 1996: 1.5%, 1997: 4.4%. Unemployment rates were: 1993: 11.4%, 1994: 10.4%, 1995: 9.4%, 1996: 9.6%, 1997: 9.1%.

9 Research examining the declining EI beneficiaries to unemployed (B/U) ratio concludes that about one-half of the drop in this ratio over the 1990s was due to changes in the EI program, while another half was due to other changes like the duration of unemployment, and the difficulty workers had obtaining the minimum hours to qualify (HRDC, 1998b; Sargent, 1998).

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# Liberal arts degrees and the labour market

*Philip Giles and Torben Drewes*

THE PERCEPTION OF TECHNOLOGY as a principal driver in economic change and widely publicized reports of skill shortages in the information technology sector have focused attention on the ability of the postsecondary sector to produce graduates in advanced technology fields. Within this context, a debate has emerged about the labour market value of the traditional liberal arts and science programming that has been a mainstay of universities.

In one view, future economic growth is jeopardized by the failure of Canadian universities to supply sufficient numbers of technically skilled graduates. Typically, the argument is not that university enrolment is too low but, rather, that the program balance is incorrect. In 1998, approximately 39% of university degrees granted were in social sciences while only 7% were in engineering and applied sciences. Twice as many degrees were granted in the humanities (12%) as in mathematics and physical sciences (6%).

In the alternative view, postsecondary education should not be judged solely on its ability to prepare students for the labour market—but even if it is, graduates in humanities and social sciences possess the problem-solving, interpersonal, communications, and learning skills that employers claim are needed in the emerging economy.

Because universities are a primary source of highly skilled labour, graduating almost 150,000 people annually, the match between their enrolment patterns and the needs of the labour market is important—not only for the economy, but also for the graduates. With $12.1 billion spent in 1997-1998 in the university system, a mismatch between labour market requirements and enrolment patterns may result in a significant efficiency loss. By the same token, a similar loss may occur if universities respond to the increasing use of program-specific funding incentives by provinces and alter a program mix that is already well-matched to labour market needs.

Surprisingly little empirical evidence is available on the relative labour market performance of university graduates from different programs. One study, which compared unemployment rates and annual incomes of university graduates in the humanities and social sciences to those of their counterparts in more applied streams, found the labour market performance of the graduates to be roughly similar (Allen, 1998). This result was confirmed by another study, which found that in 1992, two years after graduation, the unemployment rate for bachelor's graduates in humanities and social sciences was the same as the rate for engineering graduates and four percentage points lower than for applied sciences graduates (Lavoie and Finnie, 1999). Their mean annual earnings exceeded the earnings of pure and applied science graduates. An examination of rates of return by field of study found considerable variation within each field, as well as between the six fields used (Appleby et al). These variations make generalizations difficult, but median rates of return appear to be lowest for arts and humanities and highest for health-related fields of study. Rates for administration and social sciences appear quite similar to those for chemistry, physical and natural sciences, but both fall below architecture and engineering.

This article used the Survey of Labour and Income Dynamics (SLID) to look at the labour market experiences of graduates of bachelor's level programs. SLID offers rich detail on the labour market experiences of individuals from the beginning of 1993, and its longitudinal design is ideally suited for tracking changes over time (see *Data source and definitions*). Some undergraduate programs are vocational in nature, with a close association between skills taught and skill sets required in identifiable occupations, and prepare students for immediate entry into these occupations upon

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## Data source and definitions

The **Survey of Labour and Income Dynamics**, a longitudinal household survey, began in January 1993. Every three years, approximately 15,000 households enter the survey. Over a six-year period, each household completes two detailed questionnaires annually, one on labour market activity and another on income. The data used in this article are for five years, 1993 to 1997.

The study was limited to bachelor's level graduates who had obtained their degree by January 1, 1993. Of the 1,446 individuals, 59% were from humanities and social sciences and the rest were from more applied programs. The two groups are similar in a number of important labour market variables, including age and years of work experience (measured in full-year, full-time equivalents). They differ sharply, however, in their proportions of men and women, which has to be taken into account in making labour market comparisons.

Information was collected on all jobs held during any year, to a maximum of three jobs in 1993, and six in each of the following years. In cases where jobs overlapped, a main job was identified based on hours worked. In order to focus on job transitions, the analysis was restricted to main jobs for each of the 60 months. This yielded 1,174 jobs for the liberal arts and sciences group and 856 jobs for the applied programs group.

**Field of study** for undergraduate degree uses Statistic Canada's standard classification. Humanities and social sciences comprises studies in education, recreation and counselling services; fine and applied arts; humanities and related fields; and social science and related fields. The applied programs group includes commerce, management and business administration; agriculture and biological sciences and technology; engineering and applied sciences; engineering and applied science technologies and trades; health professions, science and technology; and mathematics and physical sciences.

### Reasons for job separation

**Personal:** Own illness or disability (work or non-work related), caring for own children or elder relatives, other personal or family responsibilities, school, retirement.

**Job-related:** Found new job, poor pay, not enough or too many hours, poor physical conditions, sexual harassment, personnel conflict, work too stressful, to concentrate on other job.

**Involuntary:** Company moved or went out of business, seasonal nature of job, layoff/business non-seasonal slowdown, labour dispute, dismissal by employer, temporary job/contract ended.

**Other:** Other, don't know.

graduation. Humanities and social sciences, on the other hand, focus more on the development of generic skills such as communications and analytical reasoning than on occupational preparation. Such skills, however, may permit a greater degree of mobility between labour market sectors. One would then expect to see differences in occupational mobility, wage growth, and human capital acquisition between the two groups of graduates, particularly for more recent labour market entrants.

Several dimensions of labour market experience were examined. Graduates at the bachelor's level in the more vocationally oriented educational fields enjoyed an hourly wage premium over their humanities and social sciences counterparts. For women in the former group, however, this premium may be offset by longer and more frequent periods of unemployment. And the skills of the humanities and social sciences group appeared to allow a greater ability to move across industries and occupations.

## Characteristics of graduates and their jobs

Almost one-quarter of the jobs held by graduates in humanities and social sciences were in educational services, more than double the concentration in trade, the next largest industry of employment (Table 1). The single largest concentration of jobs held by graduates in applied programs was in professional, scientific and technical services, but the concentration was much lower (17% versus 23%). For this group, three other industries stood out: public administration, health care and social assistance, and finance, insurance, real estate and leasing.[1]

By occupation, 30% of jobs held by the humanities and social sciences group were classified as social science, education, government service and religion. In fact, 19% of humanities and social sciences graduates were teachers and professors. Once occupations in business, finance and administration are included, over 50% of the jobs held by the humanities and social sciences group were accounted for. The applied programs group shows a broadly similar representation

**Table 1: Personal and job characteristics**

| | Humanities | Applied programs |
|---|---|---|
| **Personal characteristics** | | |
| Sample size | 847 | 599 |
| Mean age at January 1, 1993 | 37.3 | 38.4 |
| Mean years of full-year, full-time equivalent work experience | 12.2 | 12.7 |
| Proportion of women (%) | 56.8 | 40.5 |
| **Job characteristics** | | |
| Number of jobs in sample | 1,174 | 856 |
| **Industry** | % | |
| Educational services | 23.4 | 6.8 |
| Public administration | 9.6 | 12.2 |
| Trade | 10.4 | 9.4 |
| Professional, scientific and technical services | 9.2 | 16.6 |
| Health care and social assistance | 7.0 | 11.6 |
| Information, culture and recreation | 7.7 | -- |
| Finance, insurance, real estate and leasing | 10.1 | 11.6 |
| Manufacturing | -- | 10.7 |
| Other | 22.6 | 21.2 |
| **Occupation** | | |
| Management | 14.3 | 17.8 |
| Business, finance and administrative | 23.6 | 19.9 |
| Natural and applied sciences and related | -- | 25.2 |
| Health | -- | 11.8 |
| Social science, education, government and religion | 30.1 | -- |
| Art, culture, recreation and sport | 7.8 | -- |
| Sales and service | 14.8 | 10.8 |
| Other | 9.5 | 14.5 |

*Source: Survey of Labour and Income Dynamics, 1993-1997*

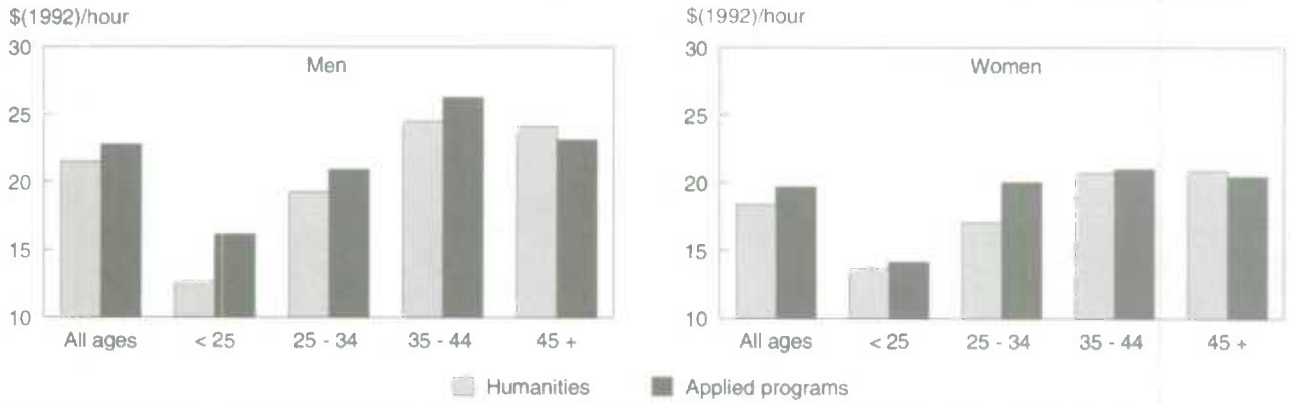
in management and in business, finance, and administrative occupations. The difference in occupational distributions between humanities and social sciences and applied programs graduates is due primarily to educational and government service, natural and applied science, and health occupations.

## How do wage rates compare?

While both groups received substantial average hourly wages, wage rates for applied programs graduates were about 6% higher for both men and women (Chart A).[2] Since the sample was restricted to individuals whose highest educational attainment was at the bachelor's level, the wage difference cannot be attributed to medical professionals in the applied programs group. However, a simple comparison of means may be misleading. With significant variation in wages across individuals, many humanities and social sciences graduates earned a wage rate higher than the mean in the applied programs group.

The wage advantage enjoyed by the applied programs graduates declined with age and actually reversed for those 45 and older, a pattern also found by Allen (1998) in his analysis of annual earnings. This is consistent with the hypothesis that skills acquired in humanities and social sciences programs allow a relatively greater accumulation of human capital after formal schooling. It may also be that, with a less direct connection between humanities and social sciences programs and occupational skill needs, graduates of these programs took longer to find their career path.

**Chart A: The wage advantage for applied programs graduates reversed for persons 45 and older.**




*Source: Survey of Labour and Income Dynamics, 1993-1997*

To provide an overall sense of wage differentials, the natural logarithm of available hourly wage observations was regressed against a categorical variable set to 1 for humanities and social sciences graduates and to 0 for others. Controls for sex, years of full-year full-time experience, job tenure, marital status, and province of residence were added (Table 2). The resulting coefficients can be interpreted as the proportional effect of a unit change in the explanatory variable. Thus, each year of experience increased the hourly wage by an average of 0.87% (equation 1). Humanities and social sciences wage rates were lower than applied programs rates by an average of 9.5% once controls for sex, experience, tenure, marital status and province were used. To obtain an estimate of the male/female wage gap within each group, separate wage regressions were run for each educational category with a dummy variable (0 = male, 1 = female). The male/female wage gap was larger in the applied programs group, where women's hourly wage rates averaged almost 16% less than men's (equation 3), compared with 7.5% in the humanities and social sciences group (equation 2).

## How do unemployment experiences compare?

Although the wage rates of older humanities and social sciences graduates matched or exceeded those of their applied programs counterparts, the return on their education was likely lower. How then can the continued popularity of the former programs be reconciled with models of rational economic decision-making? One answer may be to invoke the portfolio choice paradigm of financial investment, which postulates that a lower expected return on investment is willingly accepted for reduced risk. If the generic skills acquired in humanities and social sciences programs carry a wider currency in the labour market, they may permit a greater degree of mobility between employers and between occupations or industries, lessening unemployment risk. Depending on personal attitudes towards risk, an individual may well regard a lower return as a price to be willingly paid to avoid the risk of investing in occupation-specific skills that could be rendered obsolete by future trade or technology shocks.

To examine this issue, the unemployment experiences of the two groups were compared. Doing so also addresses more directly the 'employability' debate over the relevance of an education in the humanities and social sciences.

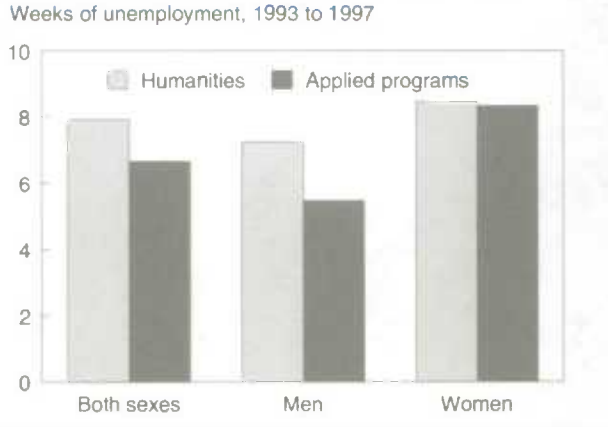
**Table 2: Wage equation estimates**

| Dependent variable: *ln(wage)* | Equation 1 All programs | Equation 2 Liberal arts | Equation 3 Applied programs |
|---|---|---|---|
| Constant | 2.84 | 2.70 | 2.96 |
| | (0.030) | (0.040) | (0.044) |
| Humanities | -0.095 | | |
| | (0.012) | | |
| Sex | -0.115 | -0.075 | -0.156 |
| | (0.012) | (0.015) | (0.018) |
| Experience | 0.0087 | 0.007 | 0.010 |
| | (0.001) | (0.001) | (0.001) |
| Job tenure | 0.0008 | 0.001 | 0.0007 |
| | (0.0001) | (0.0001) | (0.0001) |
| $R^2$ | 0.17 | 0.16 | 0.16 |

*Source: Survey of Labour and Income Dynamics, 1993-1997*
*Note: Estimates for provincial dummy variables not reported. (Standard errors in parentheses).*

SLID provides a number of different perspectives on unemployment, including total weeks of unemployment during the survey period. Over the 260 weeks from January 1993 to December 1997, the humanities and social sciences group averaged over one week more of unemployment than the applied programs graduates did (Chart B). The difference was almost entirely due to higher unemployment among humanities and social sciences men.

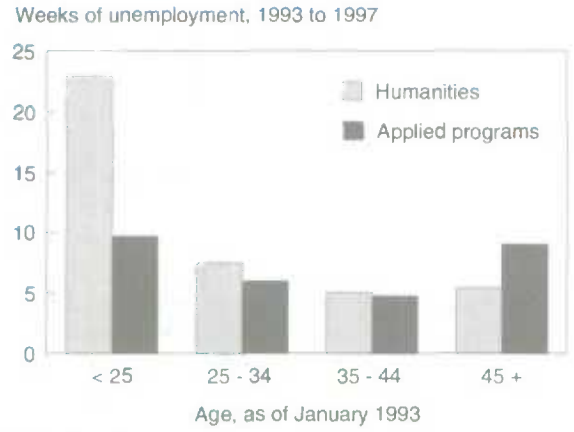
**Chart B: Men from the humanities tended to be unemployed longer than their applied programs counterparts.**




*Source: Survey of Labour and Income Dynamics*

The unemployment difference was particularly striking among young workers (Chart C). Graduates of humanities and social sciences programs appeared to have a more difficult transition into the labour market than their applied programs counterparts. Generally speaking, humanities and social sciences programs do not offer a direct connection to a well-identified occupation so graduates may spend more time experimenting with jobs—and facing the consequent periods of unemployment in between. Once they were established in the labour market, however, their unemployment experience compared favourably. Indeed, after age 45 humanities and social sciences graduates faced fewer average weeks of unemployment than did members of the applied programs group, a pattern that reinforces the suggestion of labour market advantages to humanities and social sciences programs in the longer term.

**Chart C: Young humanities graduates were unemployed far longer.**




*Source: Survey of Labour and Income Dynamics*

Were the weeks of unemployment generated by recurring short spells or by infrequent long spells?[3] The number of periods of unemployment per person was identical for women, but considerably higher for humanities and social sciences men than for applied programs men (Table 3). The difference in the percentage of men affected by unemployment was not as dramatic, indicating a higher incidence of multiple instances of unemployment among humanities and social sciences men. The mean duration of a spell was almost a week longer for humanities and social sciences men. This, together with a higher incidence, was consistent with their greater number of weeks of unemployment (7.2 weeks, compared with 5.5 weeks).

For women, however, the story was quite different. Applied programs women faced substantially longer spells of unemployment than did humanities and social sciences women or applied programs men. Humanities and social sciences women, on the other hand, had shorter spells than the men in their education group. The higher rates of unemployment among humanities and social sciences women compared with their male counterparts were attributable to a greater incidence of unemployment, whereas the same phenomenon among applied programs women and men was attributable to both a higher incidence and a longer duration.

The relative ability of humanities and social sciences graduates to avoid unemployment or to find work once unemployed presents a somewhat mixed message. Women in the two groups became unemployed at the same rate, but humanities and social sciences women exited significantly more quickly. Male humanities and social sciences graduates experienced unemployment more frequently and took longer to

**Table 3: Incidence and duration of unemployment**

| | Humanities | | Applied programs | |
|---|---|---|---|---|
| | Men | Women | Men | Women |
| **Incidence** | | | | |
| Spells per person | 0.42 | 0.57 | 0.34 | 0.57 |
| | | | % | |
| Proportion affected | 22.1 | 32.4 | 20.1 | 29.8 |
| 0 spells | 77.9 | 67.6 | 79.9 | 70.2 |
| 1 spell | 11.3 | 18.6 | 11.2 | 18.4 |
| 2 spells | 5.8 | 7.8 | 5.9 | 6.8 |
| 3 or more spells | 5.0 | 6.0 | 2.9 | 4.6 |
| | | | weeks | |
| **Duration** | | | | |
| Mean | 16.3 | 15.3 | 15.4 | 21.9 |
| | | | % | |
| Less than... | | | | |
| 8 weeks | 39.8 | 47.1 | 51.3 | 46.2 |
| 16 weeks | 69.4 | 68.6 | 70.9 | 63.1 |
| 26 weeks | 85.0 | 80.9 | 84.1 | 71.0 |
| 52 weeks | 95.6 | 93.0 | 94.4 | 87.4 |

*Source: Survey of Labour and Income Dynamics, 1993-1997*

find employment than applied programs men, although the difference in mean lengths was less than one week (16.3 versus 15.4).

## Job mobility differs

If the human capital acquired by humanities graduates is more general, then they should have a greater ability to move between sectors of employment. Moreover, with a greater transferability of skills they should also be more willing to change sectors since attendant wage losses (if any) would be smaller. High rates of mobility could be regarded as either negative (job instability) or positive (opportunity for mobility). Looking at 'voluntary' job movements involving a change in occupation captures transitions that are more likely to test the transferability of skills, since a change in industry need not imply a change in the type of work done. (Transitions refer to any movement from one main job to another, with or without an intervening spell of unemployment. For an individual returning to a job after a period of employment in another, only one transition is recorded.)

The average number of job transitions during the five-year period was comparable, with the humanities and social sciences group recording slightly higher overall transition rates for both sexes (Table 4). The higher rate among young humanities and social sciences men indicates a difficult labour market transition, perhaps caused by the lack of a clear and direct link between their educational program and eventual vocation. By the middle age category (25 to 34), the transition probability for humanities and social sciences individuals was dramatically lower and below that for the applied programs group. However, this trend was reversed for the oldest of the age categories.

The higher proportion of job separations among both groups of women—the result of child care and other family responsibilities—accords with expectation. The job separations of women were also less likely to be job-related quits—a category that includes separations initiated by the employee (although these may not be entirely voluntary, involving as they do factors such as sexual harassment, poor working conditions or undesirable hours of work). Job transitions among humanities and social sciences men were less likely to be job-related and more likely to be involuntary than among applied programs men. Humanities and social sciences women also showed a greater likelihood of separations being involuntary, but, unlike thir male counterparts, the proportion of job-related transitions was also higher. The high proportion of transitions taking place without a reported reason makes it difficult to draw firm conclusions about the relative ability of individuals in the two groups to choose to move between jobs.

**Table 4: Job mobility**

| | Humanities | | Applied programs | |
|---|---|---|---|---|
| | Men | Women | Men | Women |
| **Number of job transitions per person** | | | | |
| **All ages** | **0.76** | **0.68** | **0.70** | **0.65** |
| Under 25 | 2.24 | 1.16 | 1.15 | 1.33 |
| 25 to 34 | 0.84 | 0.79 | 0.98 | 0.85 |
| 35 and over | 0.57 | 0.46 | 0.45 | 0.31 |
| | | | % | |
| **Reason for job ending** | | | | |
| Personal reasons | 4.2 | 10.3 | 4.1 | 8.0 |
| Job-related quits | 25.4 | 18.3 | 30.8 | 12.5 |
| Involuntary | 22.9 | 23.1 | 17.3 | 11.9 |
| Other | 13.2 | 11.1 | 7.6 | 19.5 |
| Not reported | 34.3 | 37.2 | 40.2 | 48.1 |
| **Change in...** | | | | |
| Industry | 64.6 | 61.9 | 55.6 | 52.6 |
| Occupation | 64.6 | 60.5 | 55.4 | 51.6 |

*Source: Survey of Labour and Income Dynamics, 1993-1997*

The proportion of job changes taking place across industry or occupational sectors is more accurately measured and, for both sexes, humanities and social sciences individuals had significantly higher incidences of sector changes. This may reflect an enhanced ability on their part to transfer human capital across those sectors. The rates of change appear extraordinarily high, but these percentages apply only to job transitions, not to the entire sample of individuals. In fact, the majority of both groups remained in the same industry and occupation during the five years.

## Conclusion

Graduates of university programs in the humanities and social sciences acquire skills that are different than those obtained in more vocationally oriented programs—as is evident from the different industries and occupations in which they find jobs. And, as a group, humanities and social sciences graduates receive lower wage rates. Furthermore, male graduates of these programs experience higher unemployment.

These aggregate comparisons, however, mask important, long-term dimensions of labour market experiences that may be attributable to the nature of the skill sets these graduates have obtained. The wage disadvantage, for example, was caused by very significant wage differences among young workers of both sexes. By the age of 45, wage rates among humanities and social sciences graduates were above those of their applied programs counterparts. Similarly, higher relative unemployment was attributable to very drastic differences among young workers since older humanities and social sciences workers faced fewer weeks of unemployment.

The picture that emerges is one in which individuals graduating from programs in the humanities and social sciences had considerably more difficulty with the school-to-work transition, as might be expected given the lack of a clear connection between their programs of study and occupations. But once that transition was made, the generic nature of the skills they acquired appeared to stand them in good stead—because these skills have a greater longevity and are complementary to continued, lifelong learning in the face of labour market changes. The shorter unemployment durations for humanities and social sciences women and the higher occupational and industrial mobility among both sexes in this group reinforces the interpretation that their skills were more portable, thus providing them with broader re-employment opportunities.

What is the appropriate balance between investments in general or in technical or vocational skills? While income levels or unemployment rates from cross-sectional data can provide some insights, a more complete understanding of the labour market returns to these different skill sets requires observations of individual career dynamics of the sort afforded by SLID. While the data are extremely complex and the analysis in this report permits only tentative conclusions, the initial findings suggest considerable promise for future, more structured approaches.



## Notes

1 These relative concentrations are sensitive to the classification used to distinguish the humanities and social sciences group. For example, their relative under-representation in the public administration and finance sectors is at least partly because commerce, management and business administration was included in the applied programs group.

2 The survey design complicates wage rate comparisons since rates may be available for different jobs for an individual and/or at different times for the same job. SLID records hourly wage rates (either reported directly by respondents or imputed using income and hours of work information) at the beginning of each calendar year for jobs in progress at that time. End-of-year rates are also available for jobs in progress at the end of the year. Finally, the last wage rate received in any job ending during the calendar year is reported. A job begun during the year does not trigger a wage observation, so the starting wage is not explicitly recorded. However, SLID indicates whether or not wages change during the year, so that starting wages are implicitly available for those jobs for which wages do not change before December 31.

3 The weekly labour force status attached to each personal record in SLID can be used to determine the incidence and duration of periods of unemployment. Spells beginning before January 1993 or continuing past December 1997 are truncated, so average spell duration will be underestimated. Given the five-year span, this underestimation will likely be small and biases in comparisons across educational categories smaller still. Of 657 spells, 71 overlapped the beginning or the end of the survey period. Dropping these because their true length is unknown would introduce new biases, since longer spells are more likely to be dropped (longer spells are more likely to be observed at the beginning and the end of the period).

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# Employment and earnings of postsecondary graduates

*Ross Finnie*

IT SEEMS TO HAVE BECOME an accepted fact that Generation X, as a whole, has been facing tough times and has consequently sunk into a multifaceted collective malaise: cultural, moral and political, as well as economic. But is the situation really as bad as this popular wisdom suggests?

On the surface, the evidence seems incontrovertible, with various studies reporting a decline in the fortunes of younger Canadian workers, accompanied by explanations of how this came to be.[1] However, most of these studies have used the Survey of Consumer Finances (SCF) databases, and several problems can arise from this concentration of the empirical evidence. One problem is perhaps less cross-verification of the patterns than would be desirable—although the consistency of SCF with other sources is obviously significant.[2] In addition, applying analysis to the subgroup level—such as different cohorts of recent postsecondary graduates, by sex and level of education—is limited, because the associated sample sizes from the SCF are small. Another problem is that the SCF variables reflect no preference for younger workers in general, or for those going through the school-to-work transition in particular, thus limiting the scope of any analysis of this stage of the life cycle. As well, the cross-sectional nature of SCF precludes any sort of explicitly dynamic analysis, such as how employment status or earnings evolve over the early years in the labour market for given individuals.[3] Finally, comparisons over time based on the specific level of education are problematic because of changes in definition.[4]

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This paper offers a longitudinal analysis across cohorts regarding the early labour market outcomes of Canadian postsecondary graduates using the National Graduates Surveys (NGS) (see *Data source and definitions*).

The NGS databases comprise large, representative samples of college and university graduates of 1982, 1986 and 1990. The NGS provides detailed information on educational experiences and early labour market outcomes, based on interviews conducted two and five years after graduation. The NGS facilitates a detailed analysis of the school-to-work transition of postsecondary graduates from the early 1980s into the mid-1990s, a period generally thought to be one of significant change in the labour market—especially for younger workers. This analysis is done by sex and level of education—college, bachelor's, master's or doctoral.

Have early labour market outcomes deteriorated recently for postsecondary graduates? The short answer is 'no'—or at least not to the degree that some may have thought. More specifically, the most recent class of male graduates (1990) generally had similar employment rates and in some cases moderately lower earnings than the first group (1982 graduates). The middle group (1986 graduates) fared better than either of the other two, having entered the labour market during the boom years of the mid-1980s. While employment rates for female graduates were also effectively unchanged, earnings levels were generally higher for the most recent group—but more so two years than five years after graduation. The earnings gap narrowed fairly significantly by sex, but the narrowing was greater immediately following graduation than at the interview times.

The overall effects of changed 'characteristics'—field of study, employment status, and industry of employment—are small, while the moderate declines in earnings for certain groups of male graduates appear to be due largely to a generalized downward

shift and attenuated growth in earnings over the early years in the labour market. That is, male postsecondary graduates' age–earnings profiles appear to have become somewhat lower and flatter over the last decade (Finnie 1998b).

## The context: General trends in unemployment rates and earnings levels

### Unemployment rates

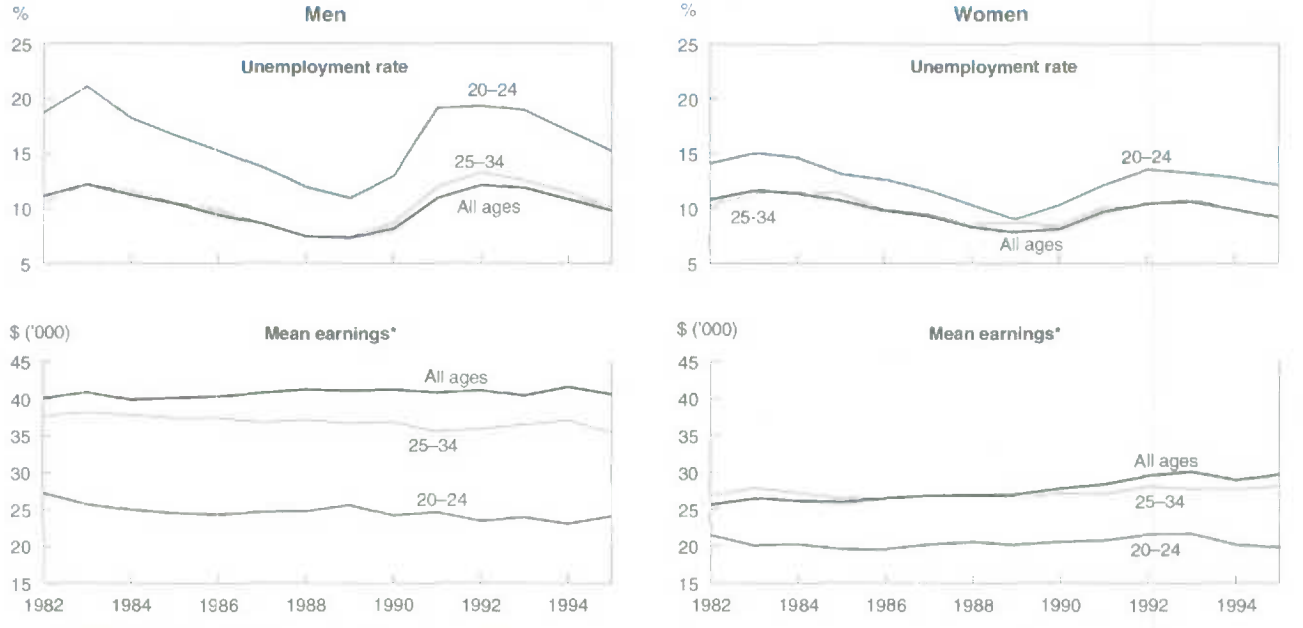
Unemployment rates from the Labour Force Survey for 1982 to 1995—the same period covered by the NGS—were generally higher for younger workers than for older ones (Chart A). In 1995, for example, men 20 to 24 had an unemployment rate of 15.2%, while those 25 to 34 had a rate of 10.1% and men overall had a rate of 9.8%. The latter figure implies considerably lower rates for men 35 and older.[7] In most cases women's unemployment rates were lower than men's for all age groups, but followed a similar pattern by age.

Rates generally increased in 1983 (after even sharper rises from 1981 to 1982), and then recovered through the rest of the 1980s. They increased again during the early-1990s recession, peaking in 1992, and subsequently improved through 1995.

Around these cyclical patterns—and perhaps contrary to popularly held views—little evidence appears of a general upward trend in unemployment rates over time. For example, comparing 1983 and 1992, the years in which rates peaked, unemployment was lower in 1992 for men and women of all age groups, except men 25 to 34 for whom rates were slightly higher. Similarly, while younger workers generally had higher unemployment rates than older ones, their situation showed no significant general deterioration relative to older workers. The unemployment rates of younger workers thus held more or less stable relative to the overall rates throughout the 1982-to-1995 period.

Two years after graduation, unemployment rates for younger as well as older men were slightly higher for the third cohort (interviewed in 1992) than for the first

**Chart A: For persons 20 to 34, unemployment rates are higher and mean earnings are lower than for the general population.**




*Sources: Labour Force Survey; Survey of Consumer Finances*

* *In 1995 constant dollars, for full-time workers. The 1983 data by age group are based on estimates by the Income Statistics Division.*

## Data source and definitions

### The National Graduates Surveys

The National Graduates Surveys (NGS) and Follow-ups were developed by Statistics Canada in conjunction with Human Resources Development Canada. The NGS files are representative of the underlying national population of college and university graduates; with over 30,000 individuals in each survey, the postgraduation experience can be analyzed meaningfully at a detailed level.[5]

The availability of data for three separate cohorts of graduates—the classes of 1982, 1986 and 1990—permits the comparison of outcomes over a period characterized by important changes in the labour market, especially for younger workers. It also updates the record as much as possible.[6]

The NGS files are longitudinal, based on information gathered during interviews carried out two and five years after graduation for each succeeding cohort (1984 and 1987, 1988 and 1991, and 1992 and 1995, respectively). This allows for a dynamic and relatively extended analysis of the school-to-work transition at two specific points in time relative to graduation.

### Construction of the working samples

Except for an initial analysis of postgraduation activity rates, graduates who indicated at one of the two interviews that they had obtained an additional degree were deleted from the analysis. Such graduates no longer belonged to the original education group—for example, in going on to become a master's graduate, a bachelor's graduate might have chosen a different major field of study—and had in any event been mixing school and work in a way likely to affect the labour market outcomes upon which this analysis focused. Including later graduates would also have thrown off the postgraduation time frame of two and five years after graduation, which corresponded to the two interview dates and which held for the non-continuing group.

In the earnings analysis, the samples were further restricted to full-time workers, thus focusing the exercise on those with significant labour market attachment and allowing the analysis to abstract from labour supply decisions that could affect earnings patterns. In particular, most full-time continuing students were eliminated from the samples by this condition, for reasons similar to those given for the deletion of graduates with additional diplomas. Finally, observations were deleted where the required information was missing, took extreme values (in the case of earnings), or was otherwise deemed unusable.

### The labour force status and earnings variables

The employment and unemployment rates are standard measures that follow the usual Statistics Canada conventions (with the exceptions noted). The earnings variable reflects what individuals would earn on an annual basis were the job to last the full year, regardless of the actual job status.

In automatically adjusting for irregular work patterns over the course of the year, this measure represents the rate of pay, which is perhaps analytically more interesting than the amount earned.

All earnings values are expressed in 1995 dollars, rounded to the nearest thousand, and capped at the $99,000 upper limit that characterized the 1984 data (the lowest bound in the six databases), or $143,035 in 1995 dollars.

(interviewed in 1984), and distinctly lower for the middle cohort (interviewed in 1988). Women's unemployment rates showed a broad similarity across cohorts, but the third cohort's rates were slightly lower than those of the first, while the middle cohort again faced more favourable economic conditions than the others. Five years after graduation, men's unemployment rates were uniformly lowest for the first cohort (interviewed in 1987), next lowest for the third cohort (interviewed in 1995), and highest for the middle cohort (interviewed in 1991). Women's unemployment rates were generally quite similar across the three cohorts. The unemployment situation improved between the two interviews for the first and third cohorts, but worsened for the second.

## Earnings levels

The patterns in mean earnings of full-time workers of various age groups are in some ways very consistent with the unemployment rates, but are in other ways quite different.

Older men's mean earnings were generally higher than younger ones', reflecting the well-known life-cycle pattern. However, the time paths showed much less cyclical variation than did unemployment rates, while a moderate trend toward lower earnings was evident for both the younger groups of men (20 to 24 and 25 to 34) over the period—both in real terms and relative to older men's earnings, which exhibited no such general decline.

Younger women also showed much less cyclical variation in earnings than was seen for unemployment rates, while the general trends over time were toward moderate gains in real earnings levels, rather than the declines experienced by young men. The mean earnings of female full-time workers of all ages rose as well.

Two years after graduation, the second and third cohorts of male graduates found themselves in labour markets where the earnings of young men aged 20 to 24 and 25 to 34 were, in each case, slightly to moderately lower than those of the preceding wave,

with more pronounced changes from the second cohort to the third. For women, the trends were in the opposite direction, showing increases rather than declines. Five years after graduation, younger men's earnings were again lower, although the timing and extent of the changes varied with the specific age group. For young women, earnings trends were relatively flat for those 20 to 24 and moderately upward for those 25 to 34.

## Activity rates of postsecondary graduates

### Broad activity rates[8]

In every case, by far the greatest proportion of postsecondary graduates was employed full time, with these rates generally rising between two and five years after graduation (Table 1). Full-time employment rates tended to be higher for men than for women, while women held down more part-time jobs than men did.

**Table 1: Status of graduates two and five years after graduation**

| | Employed | | | Not in labour force | | Employed | | | Not in labour force | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Full time | Part time | Unemployed | Enrolled | Not enrolled | Full time | Part time | Unemployed | Enrolled | Not enrolled |
| | | | | | % | | | | | |
| **1982 graduates** | | | **1984** | | | | | **1987** | | |
| College | | | | | | | | | | |
| Men | 81 | 5 | 12 | 2 | 1 | 83 | 4 | 7 | 4 | 2 |
| Women | 75 | 12 | 9 | 1 | 3 | 72 | 15 | 5 | 3 | 6 |
| Bachelor's | | | | | | | | | | |
| Men | 76 | 6 | 9 | 6 | 2 | 85 | 5 | 4 | 4 | 2 |
| Women | 70 | 11 | 9 | 5 | 5 | 74 | 12 | 4 | 3 | 7 |
| Master's | | | | | | | | | | |
| Men | 79 | 4 | 6 | 10 | 1 | 88 | 6 | 2 | 3 | 2 |
| Women | 71 | 10 | 8 | 7 | 4 | 74 | 13 | 3 | 3 | 6 |
| Doctorate | | | | | | | | | | |
| Men | 86 | 4 | 7 | 2 | 1 | 89 | 4 | 3 | 2 | 1 |
| Women | 80 | 6 | 8 | 1 | 5 | 82 | 9 | 2 | 3 | 4 |
| **1986 graduates** | | | **1988** | | | | | **1991** | | |
| College | | | | | | | | | | |
| Men | 82 | 4 | 11 | 2 | 1 | 83 | 3 | 10 | 3 | 1 |
| Women | 77 | 11 | 8 | 1 | 3 | 75 | 11 | 6 | 2 | 5 |
| Bachelor's | | | | | | | | | | |
| Men | 76 | 6 | 11 | 6 | 1 | 85 | 4 | 6 | 4 | 0 |
| Women | 70 | 12 | 9 | 5 | 3 | 75 | 12 | 5 | 3 | 4 |
| Master's | | | | | | | | | | |
| Men | 76 | 6 | 6 | 10 | 1 | 86 | 5 | 4 | 4 | 1 |
| Women | 72 | 11 | 7 | 7 | 3 | 76 | 14 | 4 | 3 | 4 |
| Doctorate | | | | | | | | | | |
| Men | 89 | 4 | 4 | 1 | 1 | 95 | 2 | 2 | 0 | 1 |
| Women | 80 | 10 | 7 | 1 | 2 | 85 | 10 | 3 | 0 | 2 |
| **1990 graduates** | | | **1992** | | | | | **1995** | | |
| College | | | | | | | | | | |
| Men | 81 | 5 | 11 | 1 | 1 | 87 | 4 | 7 | 1 | 1 |
| Women | 73 | 12 | 10 | 2 | 3 | 74 | 14 | 7 | 1 | 5 |
| Bachelor's | | | | | | | | | | |
| Men | 76 | 6 | 10 | 6 | 1 | 85 | 4 | 6 | 4 | 1 |
| Women | 70 | 12 | 10 | 4 | 4 | 75 | 12 | 6 | 2 | 4 |
| Master's | | | | | | | | | | |
| Men | 75 | 6 | 6 | 11 | 1 | 83 | 5 | 6 | 4 | 1 |
| Women | 73 | 10 | 7 | 6 | 3 | 75 | 11 | 5 | 3 | 4 |
| Doctorate | | | | | | | | | | |
| Men | 89 | 3 | 5 | 1 | 1 | 93 | 3 | 3 | 0 | 0 |
| Women | 83 | 6 | 7 | 1 | 2 | 82 | 8 | 6 | 0 | 4 |

*Source: National Graduates Surveys.*
*Note: Includes graduates with additional degrees; classification is by original degree.*

Full-time work was more common for doctoral graduates than for those at other levels, reflecting a number of demand-and-supply influences. In most cases such graduates have fully completed their schooling, are committed to being in the labour force, and have relatively abundant opportunities for employment.

Beyond this, the rates do not generally vary by level of education—college, bachelor's or master's—because of various crosscutting influences. For example, higher percentages of master's and bachelor's graduates are out of the labour force but still in school; enrolment increases part-time employment at the expense of full-time employment, and college graduates typically have higher unemployment rates than those at the bachelor's and master's levels.

## Unemployment and employment rates

Unemployment rates were quite low for graduates of all levels (college through doctoral)—mostly in the 4% to 10% range, but sometimes as low as 2% and nowhere greater than 11% (Table 2). Furthermore, these rates are considerably below the 10% to 20% for workers of comparable ages in the general population, implying considerably higher rates for non-postsecondary graduates. The graduates' rates also compare favourably with those of men and women, thus further distancing college and university graduates from the 'youth unemployment problem.'

The unemployment rates showed only a very slight upward trend across cohorts, with rates generally stable or rising only one percentage point or so from the first to last set of graduates (some of the later groups actually showed declines at either the two- or five-year interview). Thus, in addition to enjoying generally lower unemployment rates than those of the general population, postsecondary graduates also appear to have experienced no significant general deterioration in employment opportunities from the early 1980s to the mid-1990s, which may surprise many who have come to accept the Generation X idea in a wholesale fashion.

**Table 2: Employment rates of graduates in the labour force**

| | Employed | | Unemployed | Employed | | Unemployed |
|---|---|---|---|---|---|---|
| | Full time | Part time | | Full time | Part time | |
| | | | % | | | |
| **1982 graduates** | | **1984** | | | **1987** | |
| College | | | | | | |
| Men | 84 | 5 | 11 | 89 | 4 | 7 |
| Women | 79 | 12 | 9 | 79 | 16 | 5 |
| Bachelor's | | | | | | |
| Men | 85 | 6 | 9 | 92 | 4 | 4 |
| Women | 79 | 12 | 9 | 81 | 14 | 5 |
| Master's | | | | | | |
| Men | 89 | 4 | 6 | 92 | 6 | 2 |
| Women | 80 | 11 | 8 | 81 | 15 | 4 |
| Doctorate | | | | | | |
| Men | 89 | 4 | 6 | 93 | 4 | 3 |
| Women | 87 | 6 | 7 | 89 | 9 | 2 |
| **1986 graduates** | | **1988** | | | **1991** | |
| College | | | | | | |
| Men | 85 | 4 | 11 | 86 | 4 | 10 |
| Women | 80 | 12 | 8 | 81 | 13 | 7 |
| Bachelor's | | | | | | |
| Men | 84 | 5 | 10 | 90 | 4 | 7 |
| Women | 78 | 13 | 9 | 81 | 14 | 6 |
| Master's | | | | | | |
| Men | 87 | 6 | 7 | 90 | 6 | 4 |
| Women | 80 | 12 | 7 | 81 | 15 | 4 |
| Doctorate | | | | | | |
| Men | 91 | 4 | 4 | 96 | 2 | 2 |
| Women | 82 | 10 | 8 | 86 | 11 | 3 |
| **1990 graduates** | | **1992** | | | **1995** | |
| College | | | | | | |
| Men | 84 | 5 | 11 | 90 | 4 | 7 |
| Women | 77 | 13 | 10 | 79 | 14 | 7 |
| Bachelor's | | | | | | |
| Men | 84 | 6 | 10 | 92 | 3 | 5 |
| Women | 78 | 13 | 10 | 82 | 13 | 5 |
| Master's | | | | | | |
| Men | 86 | 7 | 7 | 89 | 5 | 6 |
| Women | 81 | 12 | 7 | 82 | 13 | 5 |
| Doctorate | | | | | | |
| Men | 92 | 3 | 5 | 94 | 3 | 4 |
| Women | 87 | 7 | 7 | 85 | 9 | 6 |

*Source: National Graduates Surveys*
*Note: Excludes graduates who had completed a new diploma by the relevant interview.*

Unemployment rates also declined markedly from two to five years following graduation, sometimes halving or dropping even further (albeit with some variation in these general tendencies by cohort, level of education, and sex). Thus, the school-to-work transition appears to be very much a process rather than a date-specific event; this process evidently extends beyond the first couple of years following graduation and implies that any short-term assessment of how graduates are doing risks being quite misleading.[9]

For the two later cohorts, some patterns by sex appeared in the unemployment rates—such as women tending to have lower unemployment rates than men at the college level, but higher rates at the doctoral level. However, the patterns were neither particularly flagrant nor perfectly uniform, and no obvious general differences were seen at the bachelor's or master's levels.

Part-time work was much more common among women than among men—at all levels of education and at all points in time. Furthermore, the proportion of women with part-time jobs tended to rise over the postgraduation years, reflecting primarily labour supply decisions related to having and raising children. The rise in men's part-time rates (falling in only one case) from two to five years after graduation presumably reflected different life-cycle forces as well as the availability of full-time work. By education level, doctoral graduates, especially women, tended to have lower rates of part-time work than others, but no clear patterns emerged for the other groups.

The most remarkable finding regarding part-time work may be the absence of any clear cross-cohort patterns. At a time when it is often taken for granted that 'non-standard work' in general and part-time work in particular have increased significantly—typically assumed to represent the absence of full-time job opportunities—the data provide no empirical evidence of this among postsecondary graduates. Indeed, comparing the first and last set of graduates, more declines than increases were evident in the proportion of part-time workers.

## Earnings patterns

### Mean earnings by education level

Not surprisingly, among full-time workers mean earnings were generally higher at each level of education, at least to the master's (Chart B).[10] For all years studied, the difference in annual earnings between college and bachelor's graduates ranged from $6,000 to $10,200, averaging approximately $8,300 for men and $8,700 for women. The differences between bachelor's and master's graduates were generally greater—from $10,000 to $14,000—and averaged $12,700 for men and $11,300 for women.

At the doctoral level, men's mean earnings dipped slightly when compared with those of master's graduates, except in 1995, when earnings were basically equal. In contrast, women's mean earnings rose at the doctoral level.

Taking into account the overall lower earnings levels of women, these absolute dollar patterns indicate greater rates of return from obtaining a bachelor's degree (relative to a college diploma) or a doctoral degree (relative to a master's degree) for women than for men, and comparable rates of return from going on to a master's degree (relative to a bachelor's degree).

### Earnings growth in the postgraduation years

Mean earnings rose substantially over the early years in the labour market. The increases varied from a low of 7% for 1986 female master's graduates to as much as 26% for 1982 male bachelor's graduates (Table 3).

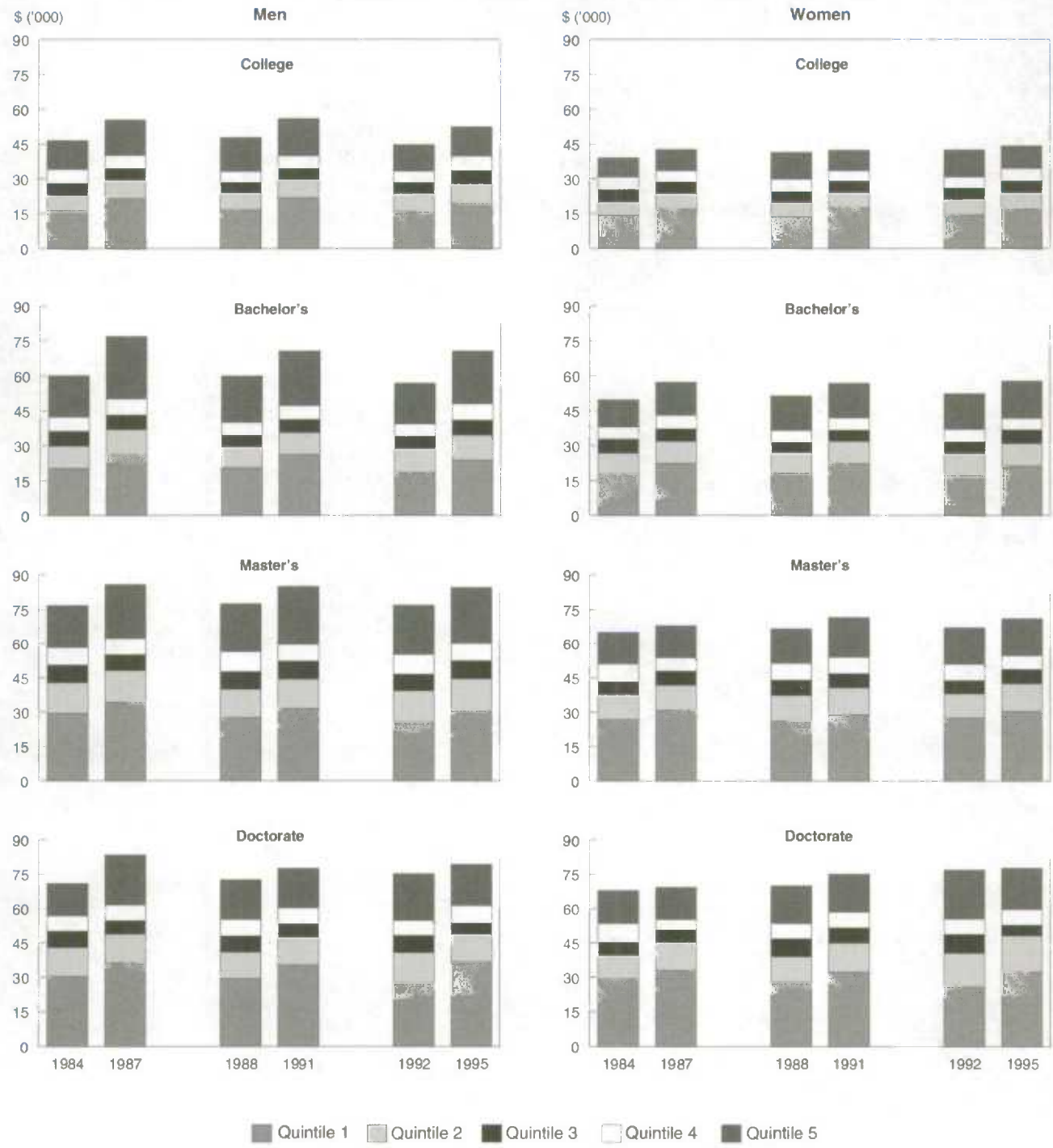
The growth in earnings was uniformly greater in percentage terms for college and bachelor's graduates than for those at the master's and doctoral levels. The latter two groups were characterized by higher, but flatter, postgraduation earnings profiles, a somewhat unexpected finding.

### Sex patterns in earnings

Mean earnings were higher for male graduates than for female graduates, with women's mean earnings varying from 77% to 100% of the level of men's for a given education group in a given year. The differences tended to vary inversely with education level, with women's earnings being closest to men's among doctoral graduates, next nearest at the bachelor's and master's levels, and furthest behind at the college level.

On the other hand, two and five years after graduation, women's earnings as a proportion of men's were all higher in each succeeding cohort when compared by education group and interview date. Indeed, in most cases the earnings gap between the sexes narrowed significantly over this period, declining by 30% to 55% from the first cohort to the third among college, bachelor's and master's graduates. For example,

**Chart B: The mean earnings of graduates generally increased with their level of education.**




*Source: National Graduates Surveys*
*Notes: In 1995 constant dollars. Samples exclude graduates who had completed another diploma by the relevant interview. A given population is divided into five equal segments, each representing 20% of that population.*

**Table 3: Mean earnings of graduates (1995 dollars)**

| | First cohort (1982 graduates) | | | Second cohort (1986 graduates) | | | Third cohort (1990 graduates) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1984 | 1987 | Change | 1988 | 1991 | Change | 1992 | 1995 | Change |
| | $ | | % | $ | | % | $ | | % |
| **College** | | | | | | | | | |
| Men | 29,700 | 36,600 | 23 | 29,400 | 35,500 | 21 | 29,700 | 35,300 | 19 |
| Women | 24,900 | 28,200 | 13 | 25,100 | 28,700 | 14 | 27,000 | 29,700 | 10 |
| Women/men (%) | 84 | 77 | | 85 | 81 | | 91 | 84 | |
| **Bachelor's** | | | | | | | | | |
| Men | 37,400 | 47,000 | 26 | 37,600 | 44,700 | 19 | 35,700 | 43,800 | 23 |
| Women | 32,700 | 38,400 | 17 | 33,500 | 38,900 | 16 | 33,600 | 38,500 | 15 |
| Women/men (%) | 87 | 82 | | 89 | 87 | | 94 | 88 | |
| **Master's** | | | | | | | | | |
| Men | 51,400 | 57,500 | 12 | 50,600 | 55,700 | 10 | 50,500 | 56,500 | 12 |
| Women | 44,400 | 48,400 | 9 | 45,500 | 48,900 | 7 | 46,000 | 50,400 | 10 |
| Women/men (%) | 86 | 84 | | 90 | 88 | | 91 | 89 | |
| **Doctorate** | | | | | | | | | |
| Men | 49,700 | 56,300 | 13 | 49,100 | 54,400 | 11 | 49,300 | 55,900 | 13 |
| Women | 46,700 | 50,700 | 9 | 47,300 | 52,400 | 11 | 49,400 | 53,800 | 9 |
| Women/men (%) | 94 | 90 | | 96 | 96 | | 100 | 96 | |

*Source: National Graduates Surveys.*
*Notes: Samples exclude graduates who had completed another diploma by the relevant interview. The calculations of the mean earnings exclude individuals with reported earnings below $5,000. Earnings have been truncated to $143,035.*

for college graduates at the first interview, women's earnings were 84%, 85% and 91% of men's, respectively, and the earnings gap narrowed by 44%, from 16 to 9 percentage points. The earnings gap between the sexes was completely eliminated among doctoral graduates for the last cohort at the two-year interview.

Along the other time dimension, however, men's mean earnings rose more than women's from two to five years following graduation for all but doctoral graduates of the middle cohort. Furthermore, in most cases the differences between the sexes in earnings growth were substantial (Tables 3 and 4), meaning that these differences grew significantly in the years following graduation in both relative and absolute terms. This was especially true among college and bachelor's graduates where the differences in mean earnings between men and women were not only generally greater but also increased more sharply over the early years in the labour market than was the case for master's and doctoral graduates.

Finally, while the differences in mean earnings between the sexes were generally smaller in the later cohorts, the differential growth rates did not change in a similar manner. This implies that the earnings gaps seen between the sexes in the later cohorts may continue to widen in the postgraduation years more or less as much as they did with the earlier sets of graduates. That is, while the earnings gaps between the sexes narrowed among postsecondary graduates across cohorts, it would appear that these were 'ratchet-like' cohort effects related to the earnings levels of each group of graduates. At the same time, the gaps have continued to increase from new (lower) levels in the postgraduation years about as much for the most recent set of graduates as for the earliest one.

In short, while female graduates' earnings profiles appear to be shifting up toward men's with each succeeding cohort in terms of the starting levels, the relative slopes of those profiles do not appear to have changed commensurately. Whether this is due to the specific types of human capital investments (such as

**Table 4: Median earnings of graduates (1995 dollars)**

| | First cohort (1982 graduates) | | | Second cohort (1986 graduates) | | | Third cohort (1990 graduates) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1984 | 1987 | Change | 1988 | 1991 | Change | 1992 | 1995 | Change |
| | $ | | % | $ | | % | $ | | % |
| **College** | | | | | | | | | |
| Men | 28,900 | 34,500 | 19 | 28,300 | 33,800 | 19 | 29,200 | 35,000 | 20 |
| Women | 23,100 | 26,900 | 16 | 23,400 | 28,600 | 22 | 26,100 | 29,000 | 11 |
| Women/men (%) | 80 | 78 | | 83 | 85 | | 89 | 83 | |
| **Bachelor's** | | | | | | | | | |
| Men | 36,100 | 43,500 | 20 | 34,400 | 42,300 | 23 | 34,400 | 40,000 | 16 |
| Women | 31,800 | 37,100 | 17 | 32,000 | 37,000 | 16 | 32,300 | 38,000 | 18 |
| Women/men (%) | 88 | 85 | | 93 | 87 | | 94 | 95 | |
| **Master's** | | | | | | | | | |
| Men | 50,600 | 55,000 | 9 | 49,200 | 52,900 | 8 | 46,900 | 54,000 | 15 |
| Women | 43,300 | 47,300 | 9 | 44,300 | 47,600 | 7 | 43,800 | 50,000 | 14 |
| Women/men (%) | 86 | 86 | | 90 | 90 | | 93 | 93 | |
| **Doctorate** | | | | | | | | | |
| Men | 50,600 | 53,700 | 6 | 49,200 | 52,900 | 8 | 46,900 | 54,000 | 15 |
| Women | 44,800 | 51,100 | 14 | 46,700 | 51,800 | 11 | 47,900 | 52,600 | 10 |
| Women/men (%) | 89 | 95 | | 95 | 98 | | 102 | 97 | |

*Source: National Graduates Surveys.*
*Notes: Samples exclude graduates who had completed another diploma by the relevant interview. The calculations of the mean earnings exclude individuals with reported earnings below $5,000. Earnings have been truncated to $143,035.*

field of education and postgraduation labour market experience), labour supply factors, direct labour market discrimination, or other factors cannot be answered by these data.[11]

## Cross-cohort earnings patterns

For the first and last cohorts of graduates, whose relevant two-year (1984 and 1992) and five-year (1987 and 1995) interview dates were at roughly comparable points in the business cycle, men's mean earnings were stable to moderately lower for the later graduates, varying with the specific educational level and interview year.

For women, on the other hand, mean earnings were uniformly higher among graduates of the later cohorts than of the earlier ones, in some cases quite substantially. Furthermore, the increases came steadily over time, with earnings rising from the first cohort to the second and then from the second to the third (the only exception being a 1% decline in the mean earnings of bachelor's graduates between 1991 and 1995).

Thus, it was as a result of the cross-cohort declines in the mean real earnings of men and increases registered by women that women's earnings as a proportion of men's rose from the first cohort to the second, and again to the third. This was true for all education groups at two and five years after graduation.

## Median earnings and related distribution patterns

The median earnings patterns (Table 4) are generally similar to the means, but with some differences, which imply something about the shape of the underlying earnings distributions of each education/sex group as well as the changes in earnings over time across the different ranges of these distributions.[12]

Average median earnings rose with the level of education, except from master's to doctoral for male graduates. Also, median earnings were generally higher for men than for women. However, the earnings gap between the sexes was smallest among doctoral graduates, next narrowest at the master's and bachelor's

levels, and greatest among college graduates. In addition, women did some significant 'catching up' from the first cohort to the second, and again from the second to the third, with women's median earnings actually surpassing men's at the doctoral level in 1992 (but no longer in 1995).

Median earnings also rose substantially between two and five years after graduation. More interestingly, while the increases in median earnings for female graduates were in every case greater than or equal to the increases in their means, this was not the case for men, for whom the median increases were in many cases smaller than those of their means, especially in the first two cohorts. As a result, the increases in female graduates' median earnings between interviews were closer to the men's increases than was the case with mean earnings, with the exception of bachelor's graduates of the middle cohort and doctoral graduates of the third cohort. For 1982 and 1986 doctoral graduates, 1986 college graduates, and 1990 bachelor's graduates, the women's growth rates surpassed the men's.

Thus, whereas the earnings gap between men and women based on mean earnings widened between two and five years after graduation in almost every case (except doctoral graduates of the middle cohort), according to the median measures the gap widened more slowly, or even became smaller, in all cases except the two noted above. Nevertheless, according to the median measures, men's earnings remained greater than women's for all groups—except, again, the most recent cohort of doctoral graduates as of the first interview.

These mean-versus-median results thus provide an interesting alternative perspective of the evolution of the earnings gap between the sexes over the graduates' early years in the labour market. At a more fundamental level, they suggest that the changes in earnings following graduation were in most cases relatively more concentrated in the middle and lower earnings ranges for women than for men. That is, equality with respect to the increases in earnings appears to have been greater among women than among men. It appears that more of the higher-earning male graduates have been characterized by higher-than-average earnings increases relative to their fellow graduates than have women—'fast tracking' has generally been more of a male than a female phenomenon. On the other hand, the relatively unrobust nature of the median measures as applied to the NGS data suggest that further investigation of this issue is required before more categorical statements can be made along these lines.[13]

## Conclusion

Based on three waves of the National Graduates Surveys, unemployment rates of male and female graduates at all levels have been lower than those of non-graduates, have improved significantly between two and five years following graduation, and have not deteriorated for later cohorts relative to earlier ones. Amidst relatively predictable patterns by sex and level of education, neither have rates of part-time work shifted noticeably over time.

Earnings generally improved significantly in the years following graduation. But the average earnings of male graduates of the more recent cohorts either held steady or showed small to moderate declines relative to earlier groups, while women's earnings either remained stable or rose. These combined effects have resulted in steady decreases in the various earnings gaps between the sexes (by level of education and year) over the last decade or so.

Thus, with respect to Generation X, the maximum decline in mean earnings of just under 7% found for male graduates at the bachelor's level is perhaps not as great as many might have expected, given that it represents the worst case among all sets of results for all groups of graduates. Furthermore, the stability and improvements experienced by female graduates would presumably be received as good news in a context where discussions are often predicated on significant declines. Coupled with relatively stable employment rates, this suggests a certain robustness to these earnings findings.

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## Notes

1 Beaudry and Green (2000), Beach and Slotsve (1996), Finnie (1997a), Morissette and Bérubé (1996), Morissette, Myles and Picot (1995), Picot (1997), Riddell (1995) and Zyblock (1996) all report that the earnings levels of younger workers have declined in relative and/or absolute terms. Beaudry and Green (2000), Morissette and Bérubé (1996), and Finnie (1997b, 1997c and 1997d) indicate that younger workers' movements up the earnings ladder over the early years in the labour market have also slowed. In short, the age-earnings profiles of recent cohorts of younger workers appear to have both shifted downward and become flatter,

indicating a decline in 'lifetime' earnings. See OECD (1996) for an international perspective of the earnings of younger workers.

2 Finnie (1997a) and Morissette and Bérubé (1996) use databases constructed from individuals' tax files.

3 Beaudry and Green (2000) attempt to push the capacity of the SCF data beyond its inherently static nature by constructing synthetic earnings profiles from the various cross-sections. But while such constructions can be quite useful for many purposes, they can never be as good as true longitudinal data, which follow given individuals over time.

4 Beaudry and Green (2000) also develop useful means for dealing with the 1989 changes in the education categories to create classifications that are as consistent as possible over time, but are still left with an irresolvable margin of error in this regard (owing largely to non-conventional educational pathways).

5 A stratified sample scheme (by province, level of education and field of study) was employed. All results reported here reflect the appropriate sample weights. The databases also include trade and vocational school graduates, but these individuals are not included in the present analysis. Response rates were in the order of 80% for each of the first interviews, and about 90% of these respondents were successfully interviewed a second time for each of the cohorts, resulting in 30,000 to 35,000 observations across the various years of data.

6 The first survey of 1995 graduates has been carried out, but those data were not ready for analysis at the time of writing. Second interview data were collected in 2000.

7 Unemployment rates of even younger men were highest of all (results not shown).

8 The activity rates presented here depart slightly from standard definitions because of the treatment of ongoing students in the NGS: students looking for work are classified as unemployed rather than out of the labour force even if they are enrolled full-time, whereas such individuals are usually counted as out of the labour force. (Classification of students with jobs as 'working' is consistent with the standard treatment.) As for the residual category of non-labour force participants (the last two columns in each year's data), current student status was imputed based on the reasons given for being out of the labour force.

9 The 'transition' notion is the central theme in Finnie (1999b). See Betts, Ferrall and Finnie (2000) for an analysis of the specific issue of time to first job.

10 The analysis focuses on full-time workers in order to abstract from labour supply decisions as much as possible. See Finnie (2000) for further discussion of the merits of this approach.

11 See Finnie and Wannell (1999) for further analysis of these issues.

12 These median results need to be interpreted with some caution, however, because rounding earnings to the nearest thousand means that certain small differences in the underlying distribution of earnings (across groups or over time) could lead to exaggerated differences in the medians. In other cases, differences in the distribution of earnings might be underrepresented by the medians. Such effects could be especially strong when looking at changes over time. See Finnie (2000) for further discussion of the pertinent issues.

While earnings figures were in fact rounded in the raw NGS data in every year except 1995, an analysis of 1995 data indicated that most individuals gave earnings figures rounded to the nearest thousand themselves. Mean earnings levels are unlikely to be greatly affected by the rounding imposed in the other survey years (imposing a similar rule on the 1995 data left the means virtually unchanged). Medians appear to be slightly more sensitive to that rounding (imposing the rounding rule generated greater differences). But the greatest problem with respect to median calculations is likely due to individuals' own rounding of the earnings figures they provided rather than the rounding exercise carried out during the collection of the data.

13 A greater increase in earnings among those in the lower parts of the distribution than among those with higher earnings to begin with. On the other hand, the median really only tells us about the very middle of the distribution, and as noted above the median calculations using the rounded earnings figures available in the NGS data might lack robustness. Hence the caution regarding the interpretation of the findings—which are, nevertheless, both interesting and of some validity because they hold for most groups in most cohorts.

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# Fact-sheet on unionization

*Ernest B. Akyeampong*

Since 1997, the Labour Force Survey (LFS) has been the major source of data on unionization. The first detailed socio-demographic and economic profile of union members from the LFS was released in *Perspectives* on the eve of Labour Day 1997. The profile was updated and expanded in 1998, 1999 and 2000 (Akyeampong, 1997, 1998, 1999 and 2000). This year's update extends it to the first half of 2001. As in past releases, data on earnings, wage settlements, inflation, and strikes and lockouts are also provided.

## Table 1: Union rates in first half of 2000 and 2001

At 12.6 million, average paid employment (employees) during the first half of 2001 was 373,000 higher than during the same period a year earlier. Union membership also grew, from 3.7 million to 3.8 million. The increase in union membership, however, was proportionately less than that for employees, so the union rate (density) fell from 30.4% to 30.0%.

This fall affected both men and women: the men's rate fell from 31.1% to 30.7%, and women's from 29.6% to 29.2%.

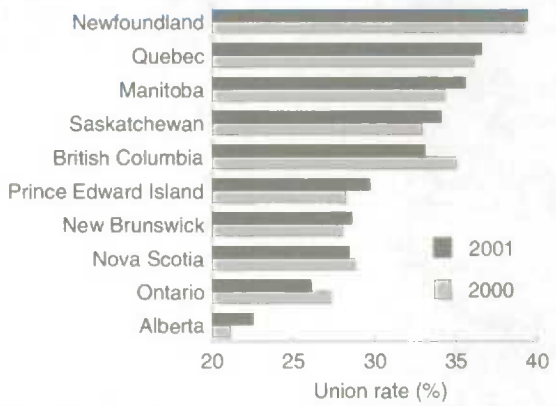
All of the decline occurred in the private sector, 18.7% to 18.1%. The public sector union rate actually rose marginally, from 69.9% to 71.0%.

Although the union rate increased in seven provinces, the declines in Ontario, British Columbia and Nova Scotia were large enough to account for the overall decline (Chart A).

The rate among full-time employees fell from 32.2% to 31.5%, but among part-time workers, it rose from 22.0% to 23.2%.

Permanent employees recorded a decline in union density. The rate rose in the largest firms (those with over 500 employees) and in the smallest firms (those with fewer than 20 employees), while it fell in firms with between 20 and 500 employees.

**Chart A: Newfoundland remains the most unionized province; Alberta, the least.**




*Source: Labour Force Survey, January-to-June averages*

Unionization rose in 9 of the 16 major industry groups—agriculture; utilities; construction; professional, scientific and technical services; management, and administrative and support services; educational services; health care and social assistance; other services; and public administration—and fell in the rest (Chart B).

Among the 10 major occupational groups, union density rose in only 3—health, management and occupations unique to primary industry. The remaining 7 experienced declines (Chart C).

The number of employees who were not union members but were covered by collective agreements averaged 276,000, up from 269,000 a year earlier (see Akyeampong, 2000, for a description of this group).

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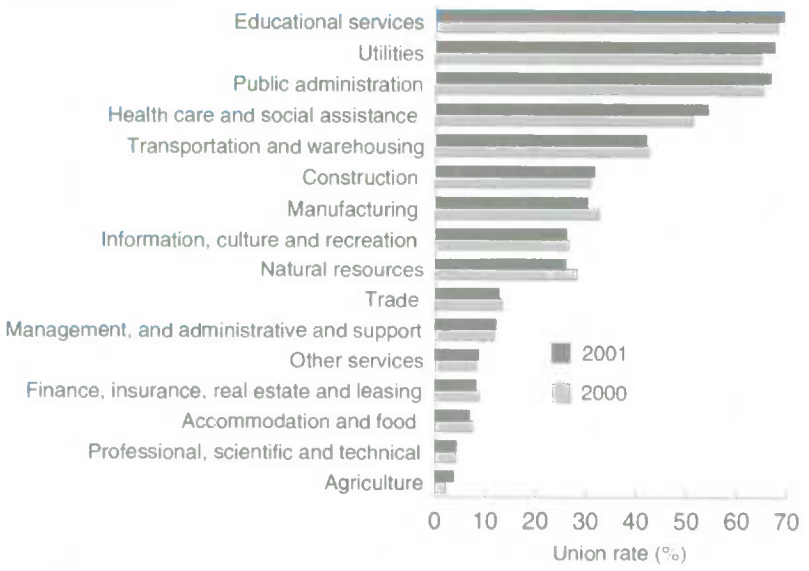
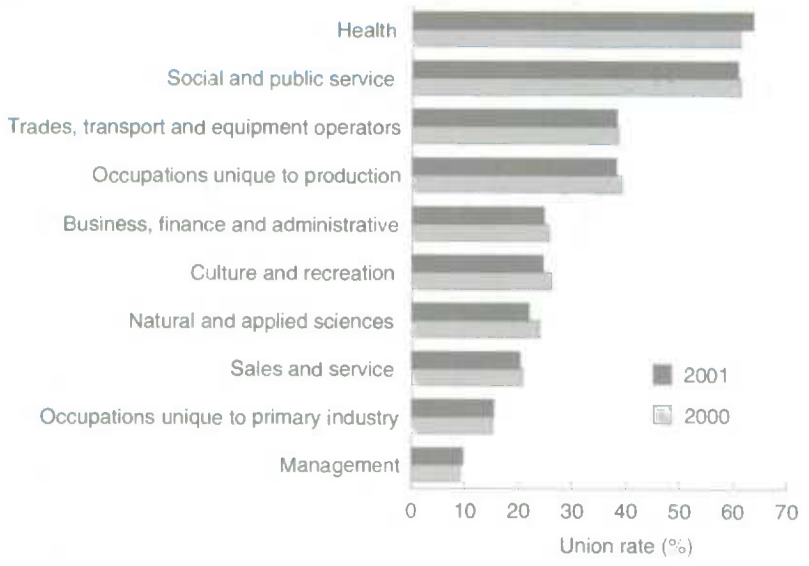
**Chart B: The highest union rates were in public sector-dominated industries.**




*Source: Labour Force Survey, January-to-June averages*

**Chart C: Unionization in community service occupations far outpaced that of others.**




*Source: Labour Force Survey, January-to-June averages*

## Table 2: 2000 annual averages

Approximately 3.7 million (29.9%) employees belonged to a union in 2000. An additional 285,000 (2.3%) were covered by a collective agreement.

Employees in the public sector—government, crown corporations, and publicly funded schools or hospitals—were almost four times as likely as their private sector counterparts to belong to a union (70.1% versus 18.4%).

Almost one in three full-time employees belonged to a union, compared with about one in five part-time workers. Also, almost one in three employees in a permanent position was a union member, compared with roughly one in five in a non-permanent job.

High union rates were found among employees aged 45 to 54 (41.5%), for those with university degrees (34.4%), in Newfoundland (37.7%) and Quebec (36.1%), in educational services (68.0%), utilities (65.9%), and public administration (65.2%), and in health care occupations (62.1%).

Low union rates were recorded by 15 to 24 year-olds (12.4%), in Alberta (21.2%), in agriculture (2.7%) and professional, scientific and technical industries (4.0%), and in management occupations (9.0%).

## Differences between the sexes

Men's union rate (30.6%) in 2000 continued to slightly exceed that of women (29.2%).

The union rate among male part-time workers (16.4%) was about half that of their full-time counterparts (32.2%). Among female employees, however, the gap was narrower (24.6% versus 30.9%).

Women's unionization in the public sector (71.7%) exceeded that of men (67.7%), reflecting their presence in public administration and in teaching and health positions. However, in the private sector, only 13.0% were unionized, compared with 22.8% of men. The lower rate reflected women's pre-dominance in sales and several service occupations.

A higher-than-average union rate was recorded among men with a postsecondary certificate or diploma (34.9%). For women, the highest rate was registered by those with a university degree (41.0%), reflecting unionization in occupations such as health care and teaching.

Men in permanent positions had slightly higher rates (31.9%) than women in similar jobs (30.0%). Among employees in non-permanent positions, women were more unionized (24.1%) than men (21.4%).

## Table 3: Average earnings and usual hours

Unionized jobs generally provide higher wages than non-unionized ones. Of course, the wage rate differences reflect many factors in addition to collective bargaining provisions. These include differences in the distribution of unionized and non-unionized employees by age, sex, job tenure, industry, occupation, firm size or geographical location. The effects of these factors are not examined in this update, but it is clear from the previous sections and Table 1 that unionized workers and jobs tend to have certain characteristics that are associated with higher wages. For example, union density ratios are higher among men, older workers, those with higher education, employees with long tenure, and those in larger firms. Clearly, not all differences in wage and non-wage benefits can be attributed solely to union status.

In 2000, the average hourly earnings of unionized workers were higher than those of non-unionized workers. This held true whether they worked full time ($19.86 versus $16.58) or part time ($16.81 versus $10.20).

In addition to having higher hourly earnings, unionized part-time employees usually worked more hours each week than did non-unionized part-timers (19.5 hours versus 16.6). As a result, their average weekly earnings were nearly double those of the latter ($336.29 versus $173.11).

On average, full-time unionized women earned 90% of their male counterparts' hourly wages. In contrast, unionized women who worked part time earned 8% more than their male counterparts.

## Table 4: Wage settlements, inflation and labour disputes

Wage gains contained in contract settlements in 1998 and 1999 surpassed inflation, but in 2000 the reverse was true. For the first quarter of 2001, wage gains averaged 3.6%—again higher than the inflation rate (2.8%).

Wage gains in the private sector exceeded those in the public sector every year during the 1990s, but in 2000 and the first quarter of 2001 the picture was reversed.

Annual statistics on strikes, lockouts and person-days lost are affected by several factors, including collective bargaining timetables, size of the unions involved, strike durations and the state of the economy. The number of collective agreements up for renewal in a year determines the potential for industrial disputes. Union size and strike duration determine the number of person-days lost in the event of a strike. The state of the economy influences the likelihood of an industrial dispute, given that one is legally possible.

The estimated 0.05% of work time lost through strikes and lockouts in 2000 was roughly half that reported in each of the preceding four years. During the first quarter of 2001, the percentage of work time lost through strikes and lockouts was even lower (0.04%).

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## Table 1: Union membership and coverage by selected characteristics

| | 2000* | | | 2001* | | |
|---|---|---|---|---|---|---|
| | | Union density | | | Union density | |
| | Total employees | Members | Coverage** | Total employees | Members | Coverage** |
| | '000 | % | % | '000 | % | % |
| **Both sexes** | **12,255** | **30.4** | **32.6** | **12,628** | **30.0** | **32.2** |
| Men | 6,335 | 31.1 | 33.5 | 6,483 | 30.7 | 33.0 |
| Women | 5,920 | 29.6 | 31.5 | 6,145 | 29.2 | 31.3 |
| **Sector†** | | | | | | |
| Public | 2,786 | 69.9 | 73.7 | 2,841 | 71.0 | 74.9 |
| Private | 9,469 | 18.7 | 20.5 | 9,787 | 18.1 | 19.8 |
| **Age** | | | | | | |
| 15 to 24 | 2,064 | 12.6 | 14.2 | 2,156 | 12.8 | 14.6 |
| 25 to 54 | 9,164 | 34.0 | 36.3 | 9,373 | 33.2 | 35.5 |
| 25 to 44 | 6,518 | 30.7 | 33.0 | 6,613 | 29.6 | 31.9 |
| 45 to 54 | 2,645 | 42.1 | 44.5 | 2,760 | 41.8 | 44.3 |
| 55 and over | 1,028 | 33.9 | 35.9 | 1,098 | 36.3 | 38.2 |
| **Education** | | | | | | |
| Less than Grade 9 | 403 | 30.9 | 32.4 | 378 | 30.4 | 31.7 |
| Some high school | 1,597 | 24.1 | 25.7 | 1,591 | 23.0 | 24.4 |
| High school graduation | 2,634 | 28.2 | 30.1 | 2,635 | 27.3 | 29.0 |
| Some postsecondary | 1,255 | 22.7 | 24.5 | 1,270 | 23.9 | 25.9 |
| Postsecondary certificate or diploma | 4,004 | 34.0 | 36.3 | 4,242 | 33.8 | 36.2 |
| University degree | 2,362 | 34.7 | 37.9 | 2,511 | 33.8 | 37.0 |
| **Province** | | | | | | |
| Atlantic | 855 | 30.6 | 32.1 | 877 | 30.8 | 32.3 |
| Newfoundland | 170 | 39.2 | 40.6 | 180 | 39.4 | 40.5 |
| Prince Edward Island | 51 | 28.2 | 29.5 | 53 | 29.7 | 31.7 |
| Nova Scotia | 354 | 28.8 | 30.3 | 358 | 28.4 | 30.2 |
| New Brunswick | 281 | 28.0 | 29.7 | 286 | 28.6 | 29.9 |
| Quebec | 2,875 | 36.1 | 39.7 | 2,948 | 36.6 | 40.1 |
| Ontario | 4,869 | 27.3 | 28.9 | 5,036 | 26.1 | 27.9 |
| Prairies | 2,100 | 26.0 | 28.4 | 2,172 | 27.3 | 29.5 |
| Manitoba | 456 | 34.3 | 37.0 | 469 | 35.6 | 37.3 |
| Saskatchewan | 365 | 32.9 | 35.3 | 369 | 34.1 | 35.9 |
| Alberta | 1,280 | 21.1 | 23.4 | 1,335 | 22.5 | 25.0 |
| British Columbia | 1,556 | 35.0 | 36.5 | 1,594 | 33.1 | 34.5 |
| **Work status** | | | | | | |
| Full-time | 10,027 | 32.2 | 34.6 | 10,299 | 31.5 | 33.9 |
| Part-time | 2,228 | 22.0 | 23.3 | 2,329 | 23.2 | 24.7 |
| **Industry** | | | | | | |
| Goods-producing | 3,108 | 32.0 | 34.4 | 3,173 | 30.6 | 32.7 |
| Agriculture | 116 | 2.1 | 2.7 | 116 | 3.8 | 4.7 |
| Natural resources | 223 | 28.2 | 30.1 | 233 | 25.9 | 27.6 |
| Utilities | 114 | 64.6 | 70.4 | 120 | 67.4 | 70.9 |
| Construction | 498 | 30.8 | 32.3 | 535 | 31.7 | 33.7 |
| Manufacturing | 2,157 | 32.5 | 35.2 | 2,168 | 30.3 | 32.4 |
| Service-producing | 9,147 | 29.8 | 31.9 | 9,455 | 29.8 | 32.0 |
| Trade | 1,950 | 13.3 | 14.8 | 2,035 | 12.8 | 14.3 |
| Transportation and warehousing | 638 | 42.4 | 44.2 | 643 | 42.0 | 44.1 |
| Finance, insurance, real estate and leasing | 725 | 8.8 | 10.4 | 747 | 8.2 | 10.4 |
| Professional, scientific and technical | 600 | 4.2 | 5.1 | 678 | 4.3 | 5.9 |
| Management, and administrative and support | 363 | 11.8 | 13.5 | 392 | 12.2 | 14.0 |
| Education | 965 | 67.9 | 71.8 | 948 | 69.2 | 73.2 |
| Health care and social assistance | 1,312 | 51.1 | 53.5 | 1,351 | 54.2 | 56.5 |
| Information, culture and recreation | 537 | 26.6 | 28.3 | 595 | 26.1 | 28.2 |
| Accommodation and food | 853 | 7.6 | 8.3 | 862 | 6.9 | 7.3 |
| Other | 443 | 8.2 | 9.5 | 446 | 8.7 | 10.1 |
| Public administration | 760 | 65.0 | 70.3 | 760 | 66.6 | 71.9 |

**Table 1: Union membership and coverage by selected characteristics** (concluded)

| | 2000* | | | 2001* | | |
|---|---|---|---|---|---|---|
| | | Union density | | | Union density | |
| | Total employees | Members | Coverage** | Total employees | Members | Coverage** |
| | '000 | % | % | '000 | % | % |
| **Occupation** | | | | | | |
| Management | 944 | 9.1 | 12.2 | 871 | 9.6 | 12.6 |
| Business, finance and administrative | 2,343 | 25.4 | 27.5 | 2,487 | 24.6 | 27.0 |
| Professional | 292 | 17.1 | 19.4 | 316 | 17.4 | 20.1 |
| Financial and administrative | 681 | 23.9 | 25.9 | 679 | 23.2 | 25.9 |
| Clerical | 1,371 | 28.0 | 30.0 | 1,491 | 26.8 | 28.9 |
| Natural and applied sciences | 827 | 23.8 | 26.7 | 888 | 21.8 | 24.5 |
| Health | 673 | 61.1 | 63.6 | 695 | 63.5 | 65.8 |
| Professional | 74 | 38.1 | 42.6 | 79 | 35.9 | 42.8 |
| Nursing | 223 | 81.2 | 82.9 | 230 | 81.7 | 83.2 |
| Technical | 173 | 56.6 | 59.1 | 180 | 59.3 | 62.1 |
| Support staff | 204 | 51.3 | 53.8 | 207 | 57.6 | 58.5 |
| Social and public service | 926 | 61.2 | 64.7 | 969 | 60.7 | 63.7 |
| Legal, social and religious workers | 368 | 37.2 | 40.3 | 386 | 38.1 | 40.4 |
| Teachers and professors | 557 | 77.1 | 80.8 | 583 | 75.7 | 79.1 |
| Secondary and elementary | 401 | 87.3 | 89.8 | 405 | 86.5 | 89.3 |
| Other | 156 | 50.7 | 57.6 | 178 | 51.2 | 55.8 |
| Culture and recreation | 258 | 26.0 | 27.9 | 281 | 24.4 | 27.5 |
| Sales and service | 3,209 | 20.7 | 22.1 | 3,339 | 20.2 | 21.7 |
| Wholesale | 310 | 6.4 | 7.6 | 359 | 5.5 | 6.9 |
| Retail | 858 | 12.7 | 13.5 | 939 | 12.5 | 13.7 |
| Food and beverage | 476 | 8.9 | 9.6 | 489 | 8.7 | 9.2 |
| Protective services | 213 | 52.6 | 58.7 | 200 | 57.9 | 63.9 |
| Child care and home support | 237 | 32.6 | 34.4 | 233 | 35.4 | 38.2 |
| Travel and accommodation | 1,115 | 27.1 | 28.6 | 1,119 | 26.6 | 27.8 |
| Trades, transport and equipment operators | 1,678 | 38.4 | 40.1 | 1,710 | 38.1 | 40.2 |
| Contractors and supervisors | 93 | 32.5 | 35.3 | 103 | 32.2 | 35.3 |
| Construction trades | 189 | 41.0 | 42.5 | 202 | 38.8 | 41.3 |
| Other trades | 661 | 41.9 | 44.0 | 684 | 41.3 | 43.6 |
| Transportation equipment operators | 480 | 36.4 | 37.7 | 463 | 36.2 | 37.8 |
| Helpers and labourers | 255 | 33.1 | 34.6 | 259 | 34.6 | 36.5 |
| Unique to primary industries | 235 | 15.1 | 16.1 | 241 | 15.3 | 16.4 |
| Unique to production | 1,162 | 39.0 | 42.0 | 1,146 | 38.0 | 40.2 |
| Machine operators and assemblers | 968 | 38.9 | 41.9 | 959 | 37.8 | 40.0 |
| Labourers | 194 | 39.4 | 42.5 | 187 | 38.9 | 40.9 |
| **Workplace size** | | | | | | |
| Under 20 employees | 4,074 | 12.4 | 13.8 | 4,165 | 12.7 | 14.2 |
| 20 to 99 employees | 4,046 | 30.4 | 32.7 | 4,152 | 30.1 | 32.2 |
| 100 to 500 employees | 2,621 | 44.7 | 47.5 | 2,754 | 42.5 | 45.4 |
| Over 500 employees | 1,513 | 53.9 | 56.7 | 1,557 | 54.0 | 56.8 |
| **Job tenure** | | | | | | |
| 1 to 12 months | 2,850 | 14.0 | 16.3 | 3,068 | 14.5 | 16.8 |
| Over 1 year to 5 years | 3,893 | 21.6 | 23.5 | 4,055 | 21.7 | 23.7 |
| Over 5 years to 9 years | 1,553 | 31.8 | 33.9 | 1,509 | 31.6 | 33.2 |
| Over 9 years to 14 years | 1,605 | 43.0 | 45.2 | 1,523 | 42.0 | 44.5 |
| Over 14 years | 2,354 | 55.1 | 57.7 | 2,473 | 54.5 | 57.0 |
| **Job status** | | | | | | |
| Permanent | 10,853 | 31.2 | 33.4 | 11,067 | 30.7 | 32.8 |
| Non-permanent | 1,402 | 23.5 | 26.0 | 1,560 | 24.8 | 27.5 |

*Source: Labour Force Survey*

* *January-to-June average.*

** *Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).*

† *Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.*

## Table 2: Union membership and coverage by selected characteristics, 2000

| | Total employees | Union member | | Union coverage* | | Not a union member** |
|---|---|---|---|---|---|---|
| | | Total | Density | Total | Density | |
| | '000 | '000 | % | '000 | % | '000 |
| **Both sexes** | **12,488** | **3,740** | **29.9** | **4,025** | **32.2** | **8,464** |
| Men | 6,481 | 1,985 | 30.6 | 2,146 | 33.1 | 4,334 |
| Women | 6,008 | 1,755 | 29.2 | 1,878 | 31.3 | 4,129 |
| **Sector†** | | | | | | |
| Public | 2,792 | 1,956 | 70.1 | 2,064 | 73.9 | 728 |
| Private | 9,696 | 1,784 | 18.4 | 1,960 | 20.2 | 7,736 |
| **Age** | | | | | | |
| 15 to 24 | 2,173 | 270 | 12.4 | 308 | 14.2 | 1,865 |
| 25 to 54 | 9,258 | 3,106 | 33.5 | 3,331 | 36.0 | 5,927 |
| 25 to 44 | 6,580 | 1,994 | 30.3 | 2,149 | 32.7 | 4,431 |
| 45 to 54 | 2,677 | 1,112 | 41.5 | 1,181 | 44.1 | 1,496 |
| 55 and over | 1,058 | 364 | 34.4 | 386 | 36.5 | 671 |
| **Education** | | | | | | |
| Less than Grade 9 | 408 | 120 | 29.5 | 127 | 31.1 | 281 |
| Some high school | 1,639 | 381 | 23.2 | 408 | 24.9 | 1,230 |
| High school graduation | 2,676 | 734 | 27.4 | 785 | 29.3 | 1,891 |
| Some postsecondary | 1,277 | 291 | 22.8 | 316 | 24.7 | 961 |
| Postsecondary certificate or diploma | 4,090 | 1,389 | 34.0 | 1,487 | 36.4 | 2,603 |
| University degree | 2,399 | 826 | 34.4 | 901 | 37.6 | 1,498 |
| **Province** | | | | | | |
| Atlantic | 886 | 267 | 30.2 | 281 | 31.7 | 605 |
| Newfoundland | 178 | 67 | 37.7 | 70 | 39.1 | 109 |
| Prince Edward Island | 53 | 15 | 27.7 | 16 | 29.3 | 38 |
| Nova Scotia | 361 | 104 | 28.7 | 109 | 30.2 | 252 |
| New Brunswick | 293 | 82 | 27.8 | 86 | 29.4 | 207 |
| Quebec | 2,926 | 1,057 | 36.1 | 1,169 | 39.9 | 1,758 |
| Ontario | 4,960 | 1,319 | 26.6 | 1,401 | 28.2 | 3,559 |
| Prairies | 2,134 | 554 | 26.0 | 608 | 28.5 | 1,526 |
| Manitoba | 463 | 156 | 33.7 | 169 | 36.5 | 294 |
| Saskatchewan | 372 | 122 | 33.0 | 131 | 35.1 | 241 |
| Alberta | 1,299 | 276 | 21.2 | 309 | 23.8 | 991 |
| British Columbia | 1,583 | 542 | 34.2 | 567 | 35.8 | 1,016 |
| **Work status** | | | | | | |
| Full-time | 10,281 | 3,251 | 31.6 | 3,502 | 34.1 | 6,779 |
| Part-time | 2,207 | 490 | 22.2 | 523 | 23.7 | 1,684 |
| **Industry** | | | | | | |
| Goods-producing | 3,200 | 999 | 31.2 | 1,080 | 33.7 | 2,120 |
| Agriculture | 124 | 3 | 2.7 | 4 | 3.5 | 119 |
| Natural resources | 234 | 66 | 28.0 | 71 | 30.2 | 164 |
| Utilities | 116 | 77 | 65.9 | 83 | 71.6 | 33 |
| Construction | 538 | 165 | 30.6 | 175 | 32.5 | 363 |
| Manufacturing | 2,187 | 688 | 31.5 | 747 | 34.1 | 1,441 |
| Service-producing | 9,288 | 2,742 | 29.5 | 2,945 | 31.7 | 6,343 |
| Trade | 2,001 | 265 | 13.2 | 295 | 14.8 | 1,706 |
| Transportation and warehousing | 638 | 266 | 41.6 | 278 | 43.5 | 361 |
| Finance, insurance, real estate and leasing | 736 | 67 | 9.0 | 81 | 11.0 | 655 |
| Professional, scientific and technical | 619 | 25 | 4.0 | 33 | 5.4 | 586 |
| Management, and administrative and support | 386 | 43 | 11.1 | 49 | 12.8 | 336 |
| Education | 929 | 632 | 68.0 | 669 | 72.0 | 261 |
| Health care and social assistance | 1,327 | 695 | 52.4 | 727 | 54.8 | 600 |
| Information, culture and recreation | 570 | 146 | 25.6 | 158 | 27.7 | 412 |
| Accommodation and food | 863 | 67 | 7.8 | 74 | 8.5 | 789 |
| Other | 458 | 40 | 8.6 | 45 | 9.9 | 413 |
| Public administration | 762 | 497 | 65.2 | 537 | 70.4 | 225 |

**Table 2: Union membership and coverage by selected characteristics, 2000** (concluded)

| | Total employees | Union member | | Union coverage* | | Not a union member** |
|---|---|---|---|---|---|---|
| | | Total | Density | Total | Density | |
| | '000 | '000 | % | '000 | % | '000 |
| **Occupation** | | | | | | |
| Management | 952 | 86 | 9.0 | 116 | 12.2 | 836 |
| Business, finance and administrative | 2,404 | 611 | 25.4 | 665 | 27.7 | 1,739 |
| Professional | 296 | 52 | 17.7 | 59 | 20.0 | 237 |
| Financial and administrative | 689 | 162 | 23.5 | 179 | 26.0 | 510 |
| Clerical | 1,419 | 397 | 28.0 | 427 | 30.1 | 992 |
| Natural and applied sciences | 852 | 201 | 23.6 | 228 | 26.7 | 624 |
| Health | 673 | 418 | 62.1 | 434 | 64.5 | 239 |
| Professional | 74 | 28 | 38.4 | 33 | 44.4 | 41 |
| Nursing | 229 | 186 | 81.3 | 190 | 83.1 | 39 |
| Technical | 169 | 97 | 57.2 | 100 | 59.3 | 69 |
| Support staff | 202 | 107 | 53.0 | 111 | 55.0 | 91 |
| Social and public service | 924 | 563 | 60.9 | 593 | 64.2 | 331 |
| Legal, social and religious workers | 373 | 140 | 37.4 | 151 | 40.4 | 222 |
| Teachers and professors | 551 | 423 | 76.7 | 442 | 80.3 | 109 |
| Secondary and elementary | 391 | 342 | 87.4 | 352 | 90.1 | 39 |
| Other | 160 | 81 | 50.8 | 90 | 56.4 | 70 |
| Culture and recreation | 267 | 69 | 26.0 | 76 | 28.4 | 191 |
| Sales and service | 3,255 | 659 | 20.3 | 709 | 21.8 | 2,547 |
| Wholesale | 323 | 20 | 6.3 | 24 | 7.5 | 299 |
| Retail | 886 | 113 | 12.8 | 122 | 13.7 | 764 |
| Food and beverage | 482 | 46 | 9.5 | 50 | 10.3 | 432 |
| Protective services | 205 | 109 | 53.0 | 119 | 58.4 | 85 |
| Child care and home support | 226 | 73 | 32.4 | 78 | 34.7 | 148 |
| Travel and accommodation | 1,133 | 298 | 26.3 | 315 | 27.8 | 819 |
| Trades, transport and equipment operators | 1,724 | 649 | 37.7 | 681 | 39.5 | 1,043 |
| Contractors and supervisors | 99 | 32 | 32.5 | 35 | 35.1 | 64 |
| Construction trades | 206 | 80 | 39.1 | 84 | 40.9 | 122 |
| Other trades | 667 | 277 | 41.6 | 292 | 43.8 | 375 |
| Transportation equipment operators | 482 | 172 | 35.7 | 179 | 37.1 | 303 |
| Helpers and labourers | 270 | 87 | 32.3 | 92 | 34.0 | 178 |
| Unique to primary industries | 262 | 37 | 14.2 | 41 | 15.6 | 221 |
| Unique to production | 1,174 | 446 | 38.0 | 482 | 41.0 | 692 |
| Machine operators and assemblers | 977 | 371 | 38.0 | 401 | 41.0 | 577 |
| Labourers | 197 | 75 | 38.3 | 81 | 41.3 | 115 |
| **Workplace size** | | | | | | |
| Under 20 employees | 4,175 | 512 | 12.3 | 576 | 13.8 | 3,599 |
| 20 to 99 employees | 4,093 | 1,226 | 29.9 | 1,322 | 32.3 | 2,771 |
| 100 to 500 employees | 2,692 | 1,176 | 43.7 | 1,257 | 46.7 | 1,434 |
| Over 500 employees | 1,529 | 827 | 54.1 | 869 | 56.9 | 659 |
| **Job tenure** | | | | | | |
| 1 to 12 months | 3,035 | 419 | 13.8 | 489 | 16.1 | 2,546 |
| Over 1 year to 5 years | 3,909 | 849 | 21.7 | 924 | 23.6 | 2,984 |
| Over 5 years to 9 years | 1,550 | 479 | 30.9 | 513 | 33.1 | 1,037 |
| Over 9 years to 14 years | 1,608 | 691 | 43.0 | 731 | 45.5 | 876 |
| Over 14 years | 2,387 | 1,303 | 54.6 | 1,367 | 57.3 | 1,020 |
| **Job status** | | | | | | |
| Permanent | 10,924 | 3,384 | 31.0 | 3,629 | 33.2 | 7,295 |
| Non-permanent | 1,564 | 356 | 22.8 | 396 | 25.3 | 1,168 |

*Source: Labour Force Survey*

* *Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).*

** *Workers who are neither union members nor covered by collective agreements.*

† *Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.*

## Table 3: Average earnings and usual hours by union and job status, 2000

| | Hourly earnings | | | Weekly earnings | | | Usual weekly hours, main job | | |
|---|---|---|---|---|---|---|---|---|---|
| | All employees | Full-time employees | Part-time employees | All employees | Full-time employees | Part-time employees | All employees | Full-time employees | Part-time employees |
| | | $ | | | $ | | | | |
| **Both sexes** | **16.64** | **17.69** | **11.72** | **614.87** | **701.66** | **210.56** | **35.7** | **39.7** | **17.3** |
| Union member | 19.46 | 19.86 | 16.81 | 712.79 | 769.50 | 336.29 | 36.3 | 38.8 | 19.5 |
| Union coverage* | 19.43 | 19.85 | 16.64 | 712.94 | 769.94 | 331.19 | 36.3 | 38.9 | 19.4 |
| Not a union member** | 15.31 | 16.58 | 10.20 | 568.23 | 666.39 | 173.11 | 35.4 | 40.1 | 16.6 |
| **Men** | **18.36** | **19.19** | **10.83** | **721.49** | **781.00** | **182.41** | **38.5** | **40.9** | **16.3** |
| Union member | 20.45 | 20.71 | 15.79 | 794.59 | 822.18 | 304.27 | 38.7 | 39.9 | 18.6 |
| Union coverage* | 20.45 | 20.72 | 15.68 | 795.58 | 823.73 | 300.76 | 38.8 | 39.9 | 18.5 |
| Not a union member** | 17.32 | 18.37 | 9.77 | 684.80 | 758.20 | 156.55 | 38.3 | 41.5 | 15.8 |
| **Women** | **14.78** | **15.72** | **12.09** | **499.84** | **597.48** | **222.17** | **32.8** | **38.0** | **17.7** |
| Union member | 18.35 | 18.70 | 17.10 | 620.27 | 697.28 | 345.11 | 33.5 | 37.4 | 19.8 |
| Union coverage* | 18.27 | 18.64 | 16.91 | 618.50 | 695.68 | 339.82 | 33.6 | 37.4 | 19.7 |
| Not a union member** | 13.19 | 14.28 | 10.39 | 445.87 | 548.91 | 180.69 | 32.4 | 38.4 | 17.0 |
| **Atlantic** | **13.82** | **14.62** | **9.67** | **522.43** | **589.84** | **173.46** | **36.7** | **40.4** | **17.5** |
| Union member | 17.53 | 17.74 | 15.43 | 664.00 | 699.17 | 313.60 | 37.7 | 39.5 | 20.2 |
| Union coverage* | 17.52 | 17.76 | 15.28 | 662.80 | 699.47 | 308.29 | 37.7 | 39.5 | 20.0 |
| Not a union member** | 12.10 | 12.98 | 8.41 | 457.30 | 532.67 | 143.15 | 36.3 | 40.9 | 17.0 |
| **Quebec** | **16.07** | **16.86** | **12.17** | **579.35** | **651.01** | **228.18** | **35.2** | **38.7** | **17.8** |
| Union member | 18.73 | 18.91 | 17.56 | 668.35 | 714.54 | 366.86 | 35.6 | 38.0 | 20.2 |
| Union coverage* | 18.62 | 18.82 | 17.29 | 666.81 | 712.86 | 359.44 | 35.7 | 38.1 | 20.1 |
| Not a union member** | 14.37 | 15.45 | 9.90 | 521.22 | 606.57 | 170.03 | 34.8 | 39.2 | 16.8 |
| **Ontario** | **17.58** | **18.84** | **11.55** | **656.48** | **751.54** | **203.60** | **35.9** | **39.9** | **17.0** |
| Union member | 20.38 | 20.95 | 16.13 | 760.24 | 820.20 | 312.61 | 36.8 | 39.2 | 18.9 |
| Union coverage* | 20.39 | 20.98 | 16.01 | 760.94 | 821.60 | 308.42 | 36.8 | 39.2 | 18.8 |
| Not a union member** | 16.47 | 17.92 | 10.48 | 615.38 | 721.33 | 178.62 | 35.6 | 40.2 | 16.6 |
| **Prairies** | **15.70** | **16.75** | **11.03** | **588.73** | **677.28** | **196.17** | **36.1** | **40.4** | **17.2** |
| Union member | 18.30 | 18.81 | 15.49 | 671.09 | 738.07 | 307.69 | 36.1 | 39.2 | 19.6 |
| Union coverage* | 18.40 | 18.94 | 15.38 | 677.61 | 744.86 | 303.91 | 36.3 | 39.3 | 19.5 |
| Not a union member** | 14.62 | 15.83 | 9.68 | 553.30 | 648.85 | 162.86 | 36.1 | 40.9 | 16.5 |
| **British Columbia** | **17.59** | **18.65** | **13.31** | **637.07** | **736.46** | **236.70** | **35.0** | **39.4** | **17.2** |
| Union member | 20.80 | 21.19 | 18.63 | 750.71 | 819.97 | 365.55 | 35.7 | 38.7 | 19.2 |
| Union coverage* | 20.79 | 21.21 | 18.48 | 752.18 | 822.06 | 361.47 | 35.8 | 38.7 | 19.1 |
| Not a union member** | 15.80 | 17.09 | 11.36 | 572.87 | 684.19 | 189.81 | 34.6 | 39.8 | 16.5 |

*Source: Labour Force Survey*

* *Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).*

** *Workers who are neither union members nor covered by collective agreements.*

## Table 4: Major wage settlements, inflation and labour disputes

| Year | Average annual increase in base wage rates* | | | Annual change in Consumer Price Index* | Strikes & lockouts† | Workers involved | Person-days not worked | Proportion of estimated working time |
|---|---|---|---|---|---|---|---|---|
| | Public sector employees** | Private sector employees** | Total employees | | | | | |
| | % | | | | | '000 | '000 | % |
| 1980 | *10.9* | *11.7* | *11.1* | *10.2* | 1,028 | 439 | 9,130 | 0.37 |
| 1981 | *13.1* | *12.6* | *13.0* | *12.4* | 1,049 | 341 | 8,850 | 0.35 |
| 1982 | *10.4* | *9.5* | *10.2* | *10.8* | 679 | 464 | 5,702 | 0.23 |
| 1983 | *4.6* | *5.5* | *4.8* | *5.9* | 645 | 329 | 4,441 | 0.18 |
| 1984 | *3.9* | *3.2* | *3.6* | *4.3* | 716 | 187 | 3,883 | 0.15 |
| 1985 | *3.8* | *3.3* | *3.7* | *4.0* | 829 | 162 | 3,126 | 0.12 |
| 1986 | *3.6* | *3.0* | *3.4* | *4.2* | 748 | 484 | 7,151 | 0.27 |
| 1987 | *4.1* | *3.8* | *4.0* | *4.3* | 668 | 582 | 3,810 | 0.14 |
| 1988 | *4.0* | *5.0* | *4.4* | *4.0* | 548 | 207 | 4,901 | 0.17 |
| 1989 | *5.2* | *5.2* | *5.2* | *5.0* | 627 | 445 | 3,701 | 0.13 |
| 1990 | *5.6* | *5.7* | *5.6* | *4.8* | 579 | 270 | 5,079 | 0.17 |
| 1991 | *3.4* | *4.4* | *3.6* | *5.6* | 463 | 253 | 2,516 | 0.09 |
| 1992 | *2.0* | *2.6* | *2.1* | *1.5* | 404 | 150 | 2,110 | 0.07 |
| 1993 | *0.6* | *0.8* | *0.6* | *1.9* | 381 | 102 | 1,517 | 0.05 |
| 1994 | ... | *1.2* | *0.3* | *0.2* | 374 | 81 | 1,607 | 0.06 |
| 1995 | *0.6* | *1.4* | *0.9* | *2.2* | 328 | 149 | 1,583 | 0.05 |
| 1996 | *0.5* | *1.7* | *0.9* | *1.6* | 330 | 282 | 3,352 | 0.11 |
| 1997 | *1.1* | *1.8* | *1.5* | *1.6* | 284 | 258 | 3,610 | 0.12 |
| 1998 | *1.6* | *1.8* | *1.7* | *1.0* | 381 | 244 | 2,444 | 0.08 |
| 1999 | *1.9* | *2.7* | *2.2* | *1.7* | 413 | 159 | 2,446 | 0.08 |
| 2000 | *2.5* | *2.3* | *2.5* | *2.7* | 377 | 144 | 1,662 | 0.05 |
| 2001 | *3.7* | *2.4* | *3.6* | *2.8* | 90 | 56 | 855 | 0.04 |

*Sources: Prices Division; Human Resources Development Canada, Workplace Information Directorate*
*Note: Major wage settlements refer to agreements involving 500 or more employees.*
* *2001 data refer to January to March only.*
** *Public sector employees are those working for government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions. Private sector employees are all other wage and salary earners.*
† *2001 data refer to January to May only.*

### Data sources

Information on union membership, density and coverage by various socio-demographic characteristics, including earnings, are from the Labour Force Survey. Further details can be obtained from Marc Lévesque, Labour Statistics Division, Statistics Canada at (613) 951-4090.

Data on strikes, lockouts and workdays lost, and those on major wage settlements were supplied by Human Resources Development Canada. Further information on these statistics may be obtained from Angèle Charbonneau, Workplace Information Directorate, HRDC at 1 800 567-6866.

Only abridged tables have been included here. The full versions are available, without charge, through the "Key labour and income facts" link in the online version of *Perspectives* (www.statcan.ca/english/indepth/75-001/peonline.htm).

# What's new?

*Recent reports and studies*

## JUST RELEASED

### *Manufacturing industries*

The Annual Survey of Manufacturers collects information on approximately 35,000 manufacturing establishments grouped into 259 industries. Data collected from the survey are now classified according to the 1997 North American Industry Classification System, which replaces the 1980 Standard Industrial Classification. The survey measures production and provides an indication of the well-being of each industry and its contribution to the Canadian economy.

The publication *Manufacturing industries of Canada: National and provincial areas, 1998* (Catalogue no. 31-203-XPB, $68) includes an analysis of the manufacturing industry and an article on "The Development of the North American Industry Classification System (NAICS) Manufacturing Time-series, 1990-1997, Outline." It also includes tables on principal statistics, notably shipments, materials purchased and labour. The data are also available electronically on demand.

For more information, contact the Dissemination Officer, Manufacturing, Construction and Energy Division, at (613) 951-9497 or 1 866 873-8789; fax: (613) 951-9499; manufact@statcan.ca.

### *Productivity*

Detailed industry data on labour and multifactor productivity in Canada's business sector have been revised. These revisions came from the normal update process and from an initiative to improve statistical coverage of the services sector. New survey information has led to an upward revision in real value-added growth in the services sector in 1997. Equally important, some manufacturing and construction activities have been reclassified to services, specifically in wholesale trade and services to businesses.

As a result of these revisions, the average annual labour productivity growth rate in the business sector has been revised upward from 1.0% to 1.3% for the period 1988 to 2000. The average annual growth rate in multifactor productivity has been revised from 0.7% to 0.8%. The larger revision to labour productivity growth comes from the adoption of a value-added measure at basic price to derive the ratio.

Productivity growth—a measure of the efficiency with which the economy transforms inputs into output—largely determines the increase in real income. Labour productivity measures the growth of output per hour worked; the broader multifactor productivity measures the productive efficiency of labour and capital in combination.

While the trend in the overall productivity growth rate remains much the same as previously reported, revisions have shifted the underlying sectoral components—goods and services.

In the goods sector, real value-added growth was revised down from 5.7% to 4.4% for 1997. This was more than offset by an upward revision in the services sector. The real value added in the services sector (excluding owner-occupied dwellings) in 1997 increased from 4.9% to 6.8%.

Moreover, growth in real value added in the services sector has been revised upward for 1998 and 1999. This has produced a slight increase in real value-added growth for the entire business sector for 1997, 1998 and 1999. Real value-added growth was revised up 0.5 percentage points in 1997, 0.3 points in 1998 and 0.4 points in 1999.

These revisions had a downward effect on both labour and multifactor productivity in goods-producing businesses after 1996. However, this downward shift was more than offset by an increase in productivity growth in services-producing businesses. For the business sector as a whole, the growth in labour productivity remained the same in 1997, but was revised upward for 1998 and 1999.

For services, the average annual growth rate in labour productivity from 1988 to 2000 was 1.2%, compared with 0.8% previously reported to 1999. In manufacturing, the average annual growth from 1988 to 2000 was 2.1%, compared with 2.2% reported previously for 1988 to 1999.

Revisions were also made to the multifactor productivity estimates. The average annual growth rate in services from 1988 to 2000 was 0.4%, compared with 0.2% for the period 1988 to 1999. In manufacturing, the average annual growth between 1988 and 2000 was 1.7%, compared with 1.6% reported previously for 1988 to 1999.

In manufacturing, both measures show that performance in the 1990s remained much the same as in the 1980s. In contrast, productivity growth in the services sector was higher in the 1990s. Thus, the higher productivity growth in the business sector as a whole in the 1990s was attributable to services.

More aggregated industry data also integrate subsequent revisions up to 1999 in the preliminary annual estimates of productivity. The estimates of gross domestic product for labour productivity are now calculated at basic prices rather than at factor costs and are, therefore, now consistent with the multifactor productivity estimates that already use a chain Fisher index of GDP valued at basic prices. This corresponds to GDP at factor cost adjusted for taxes and subsidies. (For definitions of labour productivity and multifactor productivity and the business sector, see *Productivity Growth in Canada*, [Catalogue no. 15-204-XIE, $35 or Catalogue no. 15-204-XPE, $46].)

To request data, contact productivity.measures @statcan.ca. For more information, contact Micro-Economic Studies and Analysis Division: Tarek M. Harchaoui at (613) 951-9856, harctar@statcan.ca; or Jean-Pierre Maynard at (613) 951-3654, maynard@statcan.ca; or fax (613) 951-5403.

## ■ *Demographics*

The first part of this report describes recent trends in population growth, fertility, and migration.

The second part consists of four studies: the effect of smoking on disability-free life expectancy; the effect of causes of death on changes in life expectancy at higher ages since 1951; the links between demographic changes and the economic well-being of families with preschool-age children; and the birth of children into blended families.

The 2000 issue of the *Report on the demographic situation in Canada* (Catalogue no. 91-209-XPE, $31) is now available. For more information, contact Alain Bélanger, Demography Division, at (613) 951-2326.

## ■ *National Accounts*

Statistics Canada has revised the method for measuring economic activity that will make the official estimate of economic growth more accurate, as well as more comparable to that of the United States.

The Agency has adopted another internationally accepted method of calculating the inflation-adjusted (real) gross domestic product (GDP). This change will result in a slight downward revision to real GDP growth rates.

Statistics Canada has replaced the chain Laspeyres constant price GDP (which measures GDP using prices for goods and services from a base year, currently 1992) with the chain Fisher real GDP method, which updates prices each quarter.

The switch occurred on May 31, 2001 with the release of the National Income and Expenditure Accounts for the first quarter of 2001. The Provincial Economic Accounts and the GDP by industry will all be rebased to 1997 in the fall of 2001, and converted to the Fisher measure within two years.

Two other major changes will also occur at the same time: a change in the way software is accounted for in calculating GDP, and a revaluation of the aggregate GDP at factor cost.

All spending on developing and purchasing software will be treated as a capital expenditure. Previously, only a small portion, less than 20% of total software expenditures, was treated as such. This will be a net addition to GDP, both in level and in growth, in the years in which software expenditures grow faster than other components of final expenditure. Treating software as a capital expenditure has recently been introduced by most countries, including the United States, in line with United Nations recommendations.

The aggregate GDP at factor cost will be revalued to include indirect taxes, less subsidies, on labour and capital, such as payroll taxes and property taxes. The

new valuation is at basic prices; it also follows international recommendations and brings Canada in line with the basis of valuation used by other countries. This change will be applied back to 1961, and has no effect on overall GDP at market prices. Changes are also pending for the monthly GDP by industry.

A full technical explanation of the Chain Fisher Volume Index is available on Statistics Canada's website (www.statcan.ca) on the "Statistical methods" page. The new table structure and CANSIM numbers are also available there.

For more information, contact Karen Wilson, Income and Expenditure Accounts Division, at (613) 951-0439.

## ■ *Construction industry wage rates*

This survey of wage rates was done on behalf of the Labour Program of Human Resources Development Canada (HRDC) to establish fair wage schedules for workers on federal construction projects. The survey was conducted in phases, starting with the Atlantic provinces in 1999. It does not cover Quebec and Yukon, where wage rates are based on schedules set by those governments. Data are now available for British Columbia.

Hourly wage rates were collected in January and February 2001 for 37 occupations in commercial and institutional construction in British Columbia. The occupations were selected on the basis of consultations in the fall of 2000 with unions and employers in British Columbia's construction industry. The list was then finalized in consultation with HRDC.

The survey covered establishments with six or more employees working on institutional or commercial construction projects. These establishments were asked to provide wage rates for employees working full time in selected occupations and to indicate whether the workers were unionized or non-unionized.

Hourly wage rates in commercial and institutional construction varied across British Columbia. Generally, construction workers employed by companies in the Greater Vancouver-Center-South area tended to receive higher pay, followed by those in the Island-Coast-Northern region and then the South-Interior region.

Wage rates also varied significantly depending on occupation. Of the 37 occupations surveyed, the most frequently paid wage rate in commercial and institutional construction ranged from $10.61 per hour for a flag person to $32.30 per hour for an elevator constructor. (British Columbia's minimum hourly wage is $7.60.)

The three most highly paid occupations were elevator constructors, who earned $32.30 an hour as the most frequently paid wage rate; certified refrigeration and air conditioning mechanics ($27.59); and crane operators ($25.25).

For more information, or to request a copy of the data, contact Monica Weise, Small Business and Special Surveys Division, at (613) 951-3217; monica.weise @statcan.ca.

## ■ *Employment dynamics*

The number of businesses with employees edged up from 955,000 in 1997 to 969,000 in 1998, according to a database of all businesses issuing T4 slips. The net 1.5% increase resulted from the appearance of 148,000 employers that were newly identified on the database in 1998, offset by the disappearance of 134,000 employers that had existed in 1997. About 822,000 firms were present in both 1997 and 1998.

Firms in 1998 employed about 12,952,000 part-time and full-time employees on average during the year, about 672,000 more than in 1997. Newly identified employers added 516,000 jobs; a loss of 399,000 jobs was attributed to firms that disappeared; and firms present in both 1997 and 1998 added a net 556,000 jobs.

*Employment dynamics* (Catalogue no. 61F0020XCB, $500) is a compilation of statistical tables on employment, payrolls and the number of businesses with employees for Canada, the provinces and territories. From 1983, net year-over-year changes in total employment are broken down according to job gains attributed to newly identified employers, job losses attributed to firms that ceased to be identified as employers, job gains attributed to continuing employers that increased their respective employment levels, and job losses attributed to continuing employers that decreased their respective employment levels.

For more information, contact Jamie Brunet, Small Business and Special Surveys Division, at (613) 951-6684; jamie.brunet@statcan.ca.

## ■ *Employment Insurance*

Statistics Canada has completed a historical revision to the number of beneficiaries of EI (Employment Insurance), both unadjusted and adjusted for seasonal variation. This revision was necessitated by an understatement of beneficiaries data from January 1997 to April 2000. At the same time, seasonal factors for the series on claims received, benefits paid and weeks were revised from January 1997. The EI data on claims, disqualifications and disentitlements and weeks were not affected by the revision.

For more information about all EI series, contact the Client Services Section, Labour Statistics Division, at (613) 951-4090 or 1 866 873-8788; fax: (613) 951-4087; labour@statcan.ca.

## ■ *Labour and income dynamics*

The cross-sectional public-use microdata file for the 1998 Survey of Labour and Income Dynamics (SLID) is now available on CD-ROM (Catalogue no. 75M0010XCB, $2,000).

Up to 1997, the Survey of Consumer Finances (SCF) provided microdata files to meet the needs of users of cross-sectional household income data. Statistics Canada is continuing the transition from SCF to SLID as the source of detailed cross-sectional household income data.

For more information about the survey and related products and services, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

## ■ *Household spending*

The public-use microdata file from the 1999 Survey of Household Spending offers information about spending on a wide variety of goods and services, as well as dwelling characteristics and information about household ownership of equipment.

The estimation methodology was changed for 1999. Survey weights are now adjusted to reflect population and household counts based on the 1996 Census and the income distribution of the Canadian population. Historical comparisons with data from the 1999 Survey of Household Spending should generally be made with re-weighted data.

The public-use microdata file for the Survey of Household Spending in 1999 (Catalogue no. 62M0004XCB, $3,000) is now available. Also available are revised microdata files that include updated survey weights for the 1997 and 1998 Survey of Household Spending at a cost of $100 each for users wishing to replace previously purchased files, or $3,000 each for users placing a new order. Revised microdata files for the 1992 and 1996 Family Expenditure Survey are planned.

For more information about the current survey results and related products and services, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

## ■ *Income prospects of university graduates*

The research study, *Income prospects of British Columbia university graduates,* examines the annual market income of individuals who obtained bachelor's degrees from universities in British Columbia between 1974 and 1996.

According to the study, men and women who graduated during the early 1990s earned less in the two years after graduation than did their counterparts a decade earlier.

However, incomes for graduates during the 1990s grew faster than they did for graduates during the 1980s. As a result, incomes for the more recent set of graduates eventually caught up with and then surpassed those of the earlier group.

Male graduates with a bachelor's degree in 1990 earned 11.1% less two years after graduation than did their counterparts of 1980. However, the gap narrowed to 6.7% four years after graduation, and to 2.1% within six years. Within seven years of graduation, the gap had virtually disappeared.

Among women, the gap was less pronounced. Female graduates with a bachelor's degree in 1990 earned 3.4% less two years after graduation than did

their counterparts of 1980. However, incomes for female graduates caught up more quickly, surpassing the incomes for the 1980 group of graduates within four years. Seven years after graduation, female graduates from the class of 1990 were earning 11.5% more than their counterparts of 1980.

This study also examines incomes for graduates in eight major fields of study. It compares the rates of growth of median income in one field, in which people started with lower salaries, with those in another field in which people started with higher salaries. The study found that salaries grew in both groups, but they grew at a faster rate in the field where graduates started with lower salaries.

Income after graduation was relatively high for graduates with applied degrees such as engineering, education and health. For example, five years after graduation male engineering graduates had median annual market incomes 28% higher than social science graduates. For 1974 graduates, the gap in absolute terms was almost $12,000 in constant 1992 dollars.

The range of incomes narrowed over time. Fifteen years after graduation, the median salary for male engineering graduates was just 14% more than that of male social sciences graduates. For 1974 graduates, the gap in absolute terms was $8,300, again measured in constant 1992 dollars.

In contrast, annual incomes for women after graduation appeared to converge at a faster rate. For example, five years after graduation, women with health degrees made 38% more than their counterparts with social sciences degrees. Within 15 years of graduation, women in health earned just 8% more.

The research paper *Income prospects of British Columbia university graduates* (Catalogue no. 11F0019MIE01170, free) is now available on Statistics Canada's Web site (www.statcan.ca). From the "Our Products and services page," choose "Research papers (free)." A printed version (Catalogue no. 11F0019MPE01170, $5) is also available. For more information, contact Andrew Heisz, Business and Labour Market Analysis Division, at (613) 951-3748.

("Liberal arts degrees and the labour market" and "Employment and earnings of postsecondary graduates" in this issue also examine this topic.)

# WHAT'S NEW IN EDUCATION?

## *Adult education and training*

Approximately 28% of Canadians enrolled in adult education and training activities in 1997. Three of every four who did so took them for a job-related purpose, according to a report based on the 1998 Adult Education and Training Survey.

However, rates of participation in adult education and training declined slightly through the 1990s. In 1997, more than 6 million people aged 17 and over, or nearly 28% of adults, participated in education and training activities, down from about 29% in 1991.

Also, the lower a person's educational level, the less likely he or she was to enrol in an adult education program. A university graduate was five times more likely to obtain further education than someone who did not complete high school.

In addition, participation rates were higher among the employed population than among the unemployed. In 1997, about 20% of unemployed workers participated in job-related education and training activities, compared with 29% of employed workers. This reflects the important role employers play in providing training programs.

Overall participation rates were sharply lower for the older age groups. Only 15% of those 55 to 64 and 5% of those 65 and over participated in adult education and training activities, compared with more than 30% for all other age groups.

Rates in Quebec and the Atlantic provinces, except Nova Scotia, were lower than the national average of 28%. Differences in provincial participation rates narrowed somewhat during the 1990s.

Public and private educational institutions dominate the market for adult education and training. However, employers play a crucial role in providing training programs as well. Public education institutions offered three-quarters of all programs and one-quarter of all courses taken in 1997. Employers organized one in every five courses and close to one-third of job-related courses. Commercial schools provided 20% of courses taken for job-related reasons as well as 20% of those taken for personal interest.

As found in previous surveys, the biggest barrier to taking some form of adult education was a lack of time. Six of every 10 adults who wanted to take a course or training but did not reported that their work schedule was too busy. Cost or lack of financial resources, as well as the inappropriate time or location of program offerings, were reported as a major barrier by 40% of those who wanted to take a course but did not.

This report is based on results of the 1998 Adult Education and Training Survey, a joint project of Statistics Canada and Human Resources Development Canada (HRDC). The survey collected information on education and training activities taken in 1997 by people aged 17 and over.

The report estimates the volume of formal adult education and training and, for the first time, analyzes trends in participation over the past decade. It also provides a detailed overview of the social distribution of participation in adult education and training.

Adult education and training includes all structured educational (credit and non-credit courses) and training activities taken at work, at school or at any other location for job-related or personal interest reasons.

*A report on adult education and training in Canada: Learning a living* (Catalogue no. 81-586-XIE, free) is now available on Statistics Canada's website (www.statcan.ca) and HRDC's website (www.hrdc-drhc.gc.ca/arb). On Statistics Canada's site, from the "Our products and services" page, choose "Free publications." Copies are also available from the HRDC Inquiry Centre, Hull, Quebec, K1A 0J9, or by fax at (819) 953-7260.

For more information, contact Robert Couillard, Centre for Education Statistics, Statistics Canada, at (613) 951-1519; fax: (613) 951-9040; robert.couillard @statcan.ca, or Ghyslain Charron, Human Resources Development Canada, at (819) 994-5559; info@hrdc-drhc.gc.ca. To enquire about concepts, methods or data quality, or other education statistics, contact Client Services, Centre for Education Statistics, at 1 800 307-3382 or (613) 951-7608; fax: (613) 951-9040; educationstats@statcan.ca.

## ■ *Education at a glance*

The Organisation for Economic Co-operation and Development (OECD) has published *Education at a Glance: OECD Indicators, 2001 Edition.* The report presents an updated range of internationally comparable OECD education indicators representing the consensus of professional thinking on how to measure the state of education. The full report is available on the OECD's website (www.oecd.org).

The education indicators for Canada were calculated from data provided by Statistics Canada as part of its involvement with the Canadian Education Statistics Council, which includes the provincial and territorial deputy ministers of education.

For more information, contact Client Services, Culture, Tourism and the Centre for Education Statistics, at (613) 951-7608 or 1 800 307-3382; fax: (613) 951-9040; educationstats@statcan.ca.

## ■ *Education in Canada*

*Education in Canada* summarizes data on institutions, enrolment, graduates, teachers and finance for all levels of education. Its 206 pages, and 71 tables present a comprehensive overview of the key variables in Canadian education.

Ten-year time series are shown for most variables at the Canada level and five-year time series at the provincial level. The publication also provides demographic data from the Census and educational attainment, labour force participation rates and unemployment rates of the adult population from the Labour Force Survey.

*Education in Canada, 2000* (Catalogue no. 81-229-XIB, $38 or Catalogue no. 81-229-XPB, $51) is now available. For more information, contact Client Services, Culture, Tourism and the Centre for Education Statistics, at (613) 951-7608 or 1 800 307-3382; fax: (613) 951-9040; educationstats@statcan.ca.

## ■ *Private education*

Children from both ends of the income distribution attend private schools: 29% of children who attend private schools are from families with incomes below $50,000; 26% are from families with at least twice as much income.

In contrast, about 43% of children (15 or younger) attending public schools had family incomes of less than $50,000, and only 12% had family incomes over $100,000. The proportion of children who come from households with an annual income of $50,000 to $100,000 was about the same in the case of both private and public schools, 45%. (In 1998, one-half of all children were from families with incomes less than $55,000.)

In 1998/99, 1 in every 18 children in Canada, or 5.6%, up from 4.6% in 1987/88, attended a private school for elementary or secondary education. In total, 298,000 were enrolled in private schools; just under 5 million went to public schools.

The proportion was highest in Quebec, where more than 9.2% of children were enrolled in a private elementary or secondary school in 1998/99. In British Columbia, 8.8% of all students were in private schools. The lowest proportions of children in private schools were in the Atlantic provinces and Saskatchewan. Only 0.4% of all children in Newfoundland, 0.6% in New Brunswick, 1.0% in Prince Edward Island, 1.6% in Nova Scotia and 1.3% in Saskatchewan were enrolled in private schools.

Data on the income levels of families who send their children to private schools come from the third cycle of the National Longitudinal Survey of Children and Youth, conducted in late 1998 and early 1999. This survey collected information on about 32,000 children ranging in age from newborn to 15 on aspects of their lives including the income background of their parents. Calculations based on this information are for those aged 4 to 15, and do not include the majority of children in high school, those 16 and older.

Data on enrolment come from the Survey on School Enrolment and Graduates. Data on expenditures for private and public elementary and secondary schools come from the Survey of Financial Statistics of Private Schools and the Survey of School Boards. For more information consult the Statistics Canada publication *Education in Canada* (Catalogue no. 81-229-XPB).

Public schools include all elementary and secondary schools operated by public, separate, and linguistic school boards. They do not include schools directly administered by the federal government (overseas schools operated by the Department of Defence, and schools operated by Indian and Northern Affairs Canada) or provincially operated schools for the disabled (schools for visually and hearing impaired students).

Private schools are schools operated and administered by private individuals or groups. They may be affiliated with a religious or linguistic group, or may provide specialized education to the learning disabled or gifted. Home schooling and schools in institutions are not included in this definition. Less than 0.5% of all children in the National Longitudinal Survey of Children and Youth attend home or institutional schools.

For more information, contact Garth Lipps or Miles Corak, Family and Labour Studies Division, at (613) 941-6381 or (613) 951-9047, respectively.

## WHAT'S NEW IN AGRICULTURE?

### *Agricultural statistics*

The 2001 *Extraction system of agricultural statistics* (ESAS) on CD-ROM contains an extensive collection of the most requested physical and financial data on farming. The product is a co-operative effort involving Statistics Canada and Agriculture and Agri-Food Canada.

This menu-driven software allows users to extract data by Census Agricultural Region, farm type and revenue class. The 2001 version of ESAS contains a full year of new data and a revised user's guide and reference manual.

ESAS enables users to reorganize reports, perform calculations and create graphs. Selected tables can be viewed, printed or exported for use in other applications.

The 2001 *Extraction system of agricultural statistics* on CD-ROM (Catalogue no. 21F0001XCB, $625) is now available. The update can be purchased for $295. A 50% educational discount is also available. To order, contact your nearest Statistics Canada Regional Reference Centre or call 1 800 267-6677.

For more information, contact Linda Brazeau, Agriculture Division, at (613) 951-5027; linda.brazeau @statcan.ca, or the Agriculture Division at 1 800 465-1991; agriculture@statcan.ca.

### *Farm operators' total income*

Farm operators obtained proportionally more income from non-farm sources in 1999 than in 1998, according to analysis of data from personal income tax returns. The proportion of income from non-farm sources has grown steadily since 1995. In 1999, income from non-farming activities accounted for 58 cents of every dollar in farm operator income, compared with 52 cents in 1995.

On average, farm operators' total income remained practically unchanged from 1998, at $40,000. A 5.4% drop in average net farm operating income (before depreciation) was offset by a 4.5% rise in average off-farm income. Average off-farm income amounted to $23,200 in 1999 and average net farm operating income totalled $16,800.

The growth in average off-farm income resulted mainly from a 2.6% increase in off-farm employment income (which averaged $14,200) and from an 18.6% rise in other off-farm income. Other off-farm income includes payouts from the Net Income Stabilization Account which provides financial assistance to producers by stabilizing their net income.

Wages and salaries were still the most important source of off-farm income in 1999, accounting for 55% of the total. Investment income and pension income represented 16% and 14%, respectively.

Farm operators specializing in poultry and egg production again had the highest average total income among all major farm types in 1999. Their income reached $77,700 in 1999, up 0.4% from 1998. Operators who ran hog farms posted the largest percentage gain (18.5%) in average total income, following a 38.8% decline in 1998.

Average off-farm income grew in every province in 1999. The largest gain occurred in New Brunswick (9.7%). Average off-farm income ranged from $16,300 in Quebec to $32,400 in British Columbia.

Off-farm income includes employment income (wages and salaries, and net off-farm self-employment income), investment income, pension income and other income (government transfers, such as social assistance payments and child tax benefits, but excluding pensions; Registered Retirement Savings Plan income; and other income such as alimony or maintenance income and NISA payouts). Provincial family allowances are not part of operators' off-farm income.

These estimates refer to the income of farm operators involved in one or more unincorporated or incorporated farms. These estimates encompass unincorporated farms with gross operating revenues of $10,000 or more in 1999, and incorporated farms with total agricultural sales of $25,000 or more in 1999.

For custom data requests, contact the Client Services Unit, Agriculture Division, at 1 800 465-1991; agriculture@statcan.ca. For more information, contact Lina Di Piétro, Agriculture Division, at (613) 951-3171; fax: (613) 951-3868; lina.dipietro@statcan.ca.

## ■ *Farm income and cash receipts*

Net cash income for farmers—the difference between their cash receipts and operating expenses—increased in 2000 for the first time in three years, even though crop producers saw revenues fall for the third straight year, to a six-year low.

Farmers recorded net cash income of $7.1 billion, up 15.3% from 1999, the largest increase since 1992. The level was 10.7% above the average of $6.4 billion for the five-year period from 1995 to 1999.

Total cash receipts and operating expenses set new records. Cash receipts grew 7.8% to $32.8 billion, which was 11.7% above the previous five-year average. The increase was largely due to growth in revenue for hogs and cattle, as well as program payments. Operating expenses rose 5.9% to $25.7 billion, the result of higher fuel and interest costs and livestock purchases. Program payments soared to a seven-year high of $2.8 billion.

Farmers incurred declines in net cash income in four provinces: Prince Edward Island (-53.6%), Newfoundland (-32.8%), New Brunswick (-27.4%) and Manitoba (-2.1%). For Manitoba farmers, it was the third straight decline. In Saskatchewan, net cash income was virtually unchanged following two years of decline; in Alberta, it rose 62.9% to its highest level since 1996. Lower potato prices and marketings led the declines in Prince Edward Island and New Brunswick.

Net cash income measures farm business cash flow (farm cash receipts minus operating expenses) generated from the production of agricultural goods. Net cash income represents the amount of money available for debt repayment, investment or withdrawal by the owner.

Farm cash receipts measure the gross revenue of farm businesses in current dollars. They include sales of crops and livestock products (except sales between farms in the same province) and program payments. Receipts are recorded when the money is paid to farmers before any expenses are paid.

Farm operating expenses represent business costs incurred by farm businesses for goods and services used in the production of agricultural commodities. Expenses are recorded when the money is disbursed by the farmer.

Total net farm income measures agriculture economic production by adjusting net cash income for value-of-inventory change, depreciation and income in kind. Total net farm income rose 3.5% to $3.0 billion in 2000; the increase in net cash income more than offset a decline in total value of inventory. This marked the third consecutive increase, following a substantial decrease from its 1996 peak of $4.5 billion.

The semi-annual supplement *Agriculture economic statistics* (Catalogue no. 21-603-UPE, $26/$52) is now available. The January-March 2001 issue of *Farm cash receipts* (Catalogue no. 21-001-XIB, $15/$48) is also now available.

For more information on net farm income, contact Agriculture Division: Gail-Ann Breese at (204) 983-3445; gail-ann.breese@statcan.ca; or Bernie Rosien at (613) 951-2441; bernie.rosien@statcan.ca. For more information on farm cash receipts, contact Kimberley Boyuk, Agriculture Division, at (613) 951-2510; kimberley.boyuk@statcan.ca.

## UPCOMING CONFERENCE

### *Symposium 2001*
### *Achieving Data Quality in a Statistical Agency: A Methodological Perspective*
### *XVIII$^{th}$ International Symposium on Methodological Issues*
***October 16-19, 2001, Hull, Quebec***

With its eighteenth annual symposium, Statistics Canada continues its series of conferences on methodological issues, attracting statisticians, researchers, academics, and data analysts and others interested in meeting the challenges of a statistical agency. *Symposium 2001* will feature both invited and contributed sessions, and will provide an ideal forum for exchanging experiences and knowledge of methods to achieve data quality. Papers of this conference will be published in the proceedings of the symposium.

The conference will host representatives from many organizations, such as the Australian Bureau of Statistics, Eurostat, INSEE, ISTAT, OECD, Statistics Finland, Statistics Netherlands, Statistics Sweden, UNESCO, the U.S. Bureau of the Census, the U.S. Bureau of Labor Statistics, and the U.S. Center for Health Statistics.

The symposium will be held at the Palais des Congrès in Hull, Quebec, just minutes from downtown Ottawa. For more information, contact Simon Cheung, Household Survey Methods Division, Statistics Canada, R.H. Coats Building, 16th floor, Ottawa, Ontario, Canada, K1A 0T6; (613) 951-1482; fax: (613) 951-3100; symposium2001@statcan.ca.

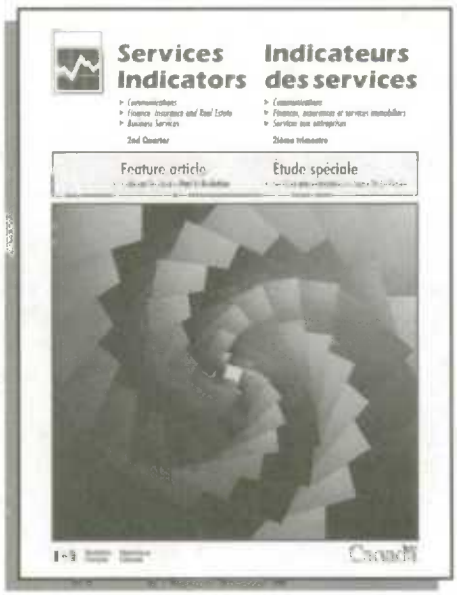
# SERVICES INDICATORS

# For and About Businesses Serving the Business of Canada...

## At last, current data and expert analysis on this VITAL sector in one publication!

The services sector now dominates the industrial economies of the world. Telecommunications,banking, advertising, computers, real estate, engineering and insurance represent an eclectic range of services on which all other economic sectors rely.

Despite their critical economic role, however, it has been hard to find out what's happening in these industries. Extensive and time-consuming efforts have, at best, provided a collection of diverse bits and pieces of information ... an incomplete basis for informed understanding and effective action.

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# Key labour and income facts

*Selected charts and analysis*

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

## Administrative data

*Small area and administrative data*
Frequency: Annual
Contact: Customer Services
(613) 951-9720

## Business surveys

*Annual Survey of Manufactures*
Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

*Annual Surveys—Service Industries*
Frequency: Annual
Contact: Lucie Lussier
(613) 951-0410

*Business Conditions Survey of Manufacturing Industries*
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

## Census

*Census labour force characteristics*
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

*Census income statistics*
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

## Employment and income surveys

*Labour Force Survey*
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-4090

*Survey of Employment, Payrolls and Hours*
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

*Help-wanted Index*
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

*Employment Insurance Statistics Program*
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

*Major wage settlements*
Bureau of Labour Information
(Human Resources Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

*Labour income*
Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

*Survey of Labour and Income Dynamics*
Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

*Survey of Financial Security*
Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

*Survey of Household Spending*
Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

## General social survey

*Education, work and retirement*
Frequency: Occasional
Contact: Client Services
(613) 951-5979

*Social and community support*
Frequency: Occasional
Contact: Client Services
(613) 951-5979

*Time use*
Frequency: Occasional
Contact: Client Services
(613) 951-5979

## Pension surveys

*Pension Plans in Canada Survey*
Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

*Quarterly Survey of Trusteed Pension Funds*
Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

## Special surveys

*Survey of Work Arrangements*
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

*Adult Education and Training Survey*
Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

*Graduate Surveys*
(Postsecondary)
Frequency: Occasional
Contact: Client Services
(613) 951-7608

## Annual surveys—Service industries

The following charts and tables highlight the survey program of Statistics Canada's Service Industries Division. These surveys collect and publish data for various service industries, classified according to the North American Industry Classification System (NAICS).

NAICS replaces the separate systems formerly used by Canada, the United States, and Mexico and provides a common framework for the collection of economic and financial data. NAICS is based on a production-oriented, or supply-based framework in which establishments are grouped into industries according to similarity in the processes used to produce goods and services. The Canadian version groups economic activity into 20 sectors and 921 industries, superseding the 1980 Standard Industrial Classification. NAICS recognizes emerging industries and significantly expands the number of service producing industries.

In addition to the adoption of NAICS, Statistics Canada has redesigned its entire framework for conducting business surveys. Approximately 200 separate business surveys have been integrated into a single master survey program called the Unified Enterprise Survey (UES). The UES collects more industry and commodity detail at the provincial level than was possible previously and avoids overlap between different survey questionnaires. The highlighted service industries form part of the UES program. Selected industries are shown (with their corresponding NAICS code), accompanied by a relevant chart or table. For more information about the survey program and data from the Service Industries Division, contact Lucie Lussier at (613) 951-0410 or lucie.lussier@statcan.ca.

## Accounting and Bookkeeping Services (5412)

Establishments primarily engaged in providing accounting, assurance, consulting, taxation and bookkeeping services.

**Accounting and bookkeeping services—Large* firms' industry share**


*Source: Survey of Accounting and bookkeeping services, 1998*
* *Firms with annual revenue greater than $10 million.*

## Advertising and Related Services (5418)

Establishments primarily engaged in creating mass-media advertising or public relation campaigns; placing advertising in media for advertisers or advertising agencies; selling media time or space to advertisers or advertising agencies for media owners; creating and implementing indoor or outdoor display advertising campaigns; creating and implementing direct mail advertising campaigns; delivering (except by mail) advertising materials or samples; creating and implementing specialty advertising campaigns; providing related services, such as sign painting and lettering, welcoming services and window trimming services.

**Advertising and related services—Revenues and expenses (all firms), 1998**

| | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|
| | | $ millions | | % |
| Advertising agencies | 1,789 | 649 | 1,619 | 9 |
| All other services related to advertising | 1,885 | 544 | 1,735 | 8 |
| **Total** | **3,674** | **1,194** | **3,354** | **9** |

*Source: Survey of Advertising and Related Services*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Architectural Services (54131)

Establishments primarily engaged in planning and designing the construction of residential, institutional, leisure, commercial and industrial buildings and other structures by applying knowledge of design, construction procedures, zoning regulations, building codes and building materials.

**Architectural services industry—Employment and salaries, wages and benefits, 1998**

| | Employment | | | | Salaries, wages and benefits |
|---|---|---|---|---|---|
| | Total | Full-time employees | Part-time employees | Working proprietors | |
| | | | | | $'000 |
| **Canada** | **7,058** | **5,974** | **764** | **320** | **369,392** |
| Newfoundland | 48 | 47 | 1 | 0 | 2,384 |
| Prince Edward Island | 9 | 8 | 1 | 0 | x |
| Nova Scotia | 185 | 158 | 21 | 6 | 9,147 |
| New Brunswick | 155 | 145 | 8 | 2 | 7,228 |
| Quebec | 1,203 | 1,043 | 117 | 43 | 64,656 |
| Ontario | 2,909 | 2,545 | 277 | 87 | 156,961 |
| Manitoba | 193 | 162 | 18 | 13 | 9,082 |
| Saskatchewan | 195 | 163 | 14 | 18 | 10,442 |
| Alberta | 719 | 558 | 136 | 25 | 37,250 |
| British Columbia | 1,419 | 1,125 | 170 | 124 | 70,520 |
| Yukon | 5 | 4 | 0 | 1 | x |
| Northwest Territories | 18 | 16 | 1 | 1 | x |

*Source: Survey of Architectural Services*

## Arts, Entertainment and Recreation (71)

Establishments that operate facilities or provide services to meet the cultural, entertainment and recreational interests of their patrons (exludes gambling industries).

**Arts, entertainment and recreation—Revenues and expenses (all firms), 1998**

| | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|
| | | $ millions | | % |
| Performing arts companies | 901 | 275 | 816 | 9 |
| Spectator sports | 1,582 | 707 | 1,703 | -8 |
| Amusement parks and arcades | 446 | 124 | 425 | 5 |
| Golf courses and country clubs | 1,622 | 578 | 1,487 | 8 |
| Skiing facilities | 541 | 120 | 449 | 17 |
| Fitness and recreational sports centres | 818 | 261 | 770 | 6 |
| Marinas, bowling centres and all other amusement and recreation industries | 1,722 | 402 | 1,653 | 4 |
| **Total** | **7,632** | **2,466** | **7,301** | **4** |

*Source: Survey of Arts, Entertainment and Recreation*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Automotive Equipment Rental and Leasing (5321)

These establishments are primarily engaged in renting or leasing vehicles, such as passenger cars, passenger vans, trucks, truck tractors, buses, semi-trailers, utility trailers and recreational vehicles.

**Automotive equipment rental and leasing services—Revenues and expenses (all firms), 1998**

| | Establish-ments | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|---|
| | No. | | $ millions | | % |
| **Total** | **2,701** | **4,168** | **637** | **3,906** | **6** |

*Source: Survey of Automotive Equipment Rental and Leasing Services*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Commercial and Industrial Machinery and Equipment Rental and Leasing (5324)

These establishments are generally involved in providing capital investment-type equipment, without operator, and typically serve businesses.

**Commercial and industrial machinery and equipment rental and leasing—Revenues and expenses (all firms), 1998**

| | Establishments | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|---|
| | No. | | $ millions | | % |
| **Total** | **4,043** | **4,030** | **744** | **3,516** | **13** |

*Source: Survey of Commercial and Industrial Machinery and Equipment Rental and Leasing*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Consumer Goods Rental (5322/5323)

Establishments primarily engaged in renting or leasing personal and household goods or a range of consumer, commercial and industrial equipment for a short period of time. They typically operate from conveniently located retail-like facilities.

**Consumer goods rental—Revenues and expenses (all firms), 1998**

| | Establishments | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|---|
| | No. | | $ millions | | % |
| Consumer goods rental | 4,600 | 1,629 | 426 | 1,629 | 0 |
| General rental centres | 1,500 | 344 | 72 | 313 | 9 |
| **Total** | **6,100** | **1,973** | **497** | **1,943** | **2** |

*Source: Survey of Consumer Goods Rental*

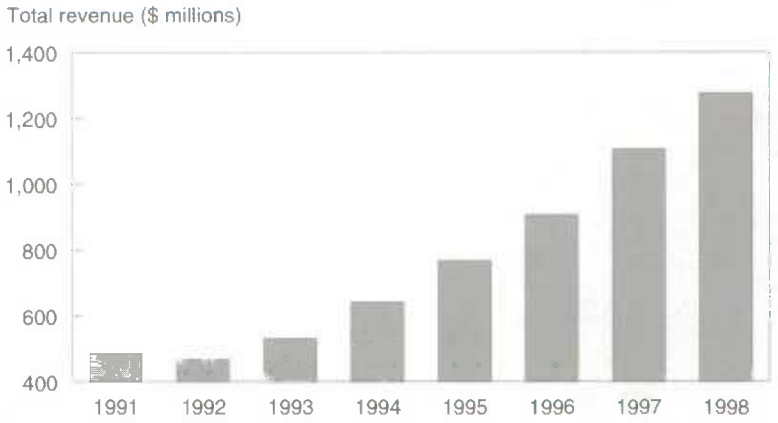
* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Employment Services (5613)

Establishments primarily engaged in listing employment vacancies and selecting, referring and placing applicants in employment, either on a permanent or temporary basis; and establishments primarily engaged in supplying workers for limited periods of time to supplement the workforce of the client firm.

**Employment services—Revenue for the top 20 firms**

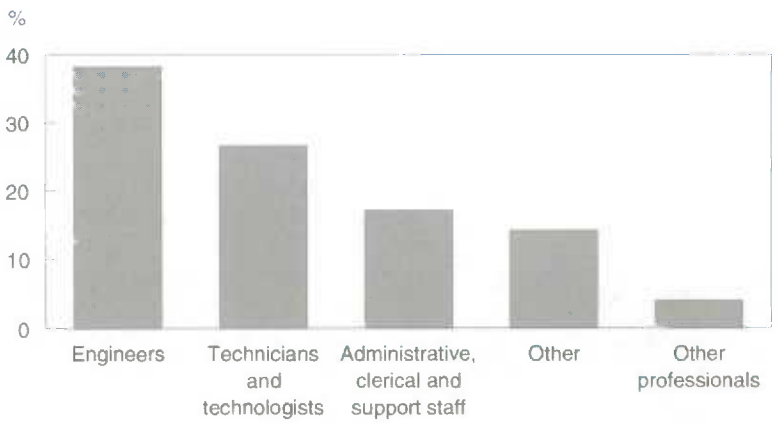



*Source: Survey of Employment Services*

## Engineering Services (541330)

Establishments primarily engaged in applying principles of engineering in the design, development and utilization of machines, materials, instruments, structures, processes and systems.

**Engineering services—Employment by category**

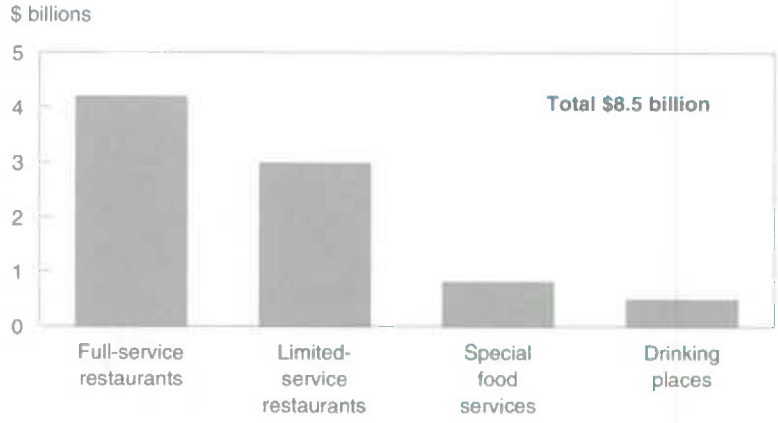



*Source: Survey of Engineering Services, 1998*

## Food Services and Drinking Places (722)

Establishments primarily engaged in preparing meals, snacks and beverages, to customer order, for immediate consumption on and off the premises. This subsector does not include food service activities that occur within establishments such as hotels, civic and social associations, amusement and recreation parks, and theatres. However, leased food-service locations in facilities such as hotels, shopping malls, airports and department stores are included.

**Food services and drinking places industry—Salaries and wages**




*Source: Survey of Food Services and Drinking Places, 1998*

## Management, Scientific and Technical Consulting

Establishments primarily engaged in Administrative Management and General Management Consulting Services (541611); Human Resource and Executive Search Consulting Services (541612); Other Management Consulting Services (541619); Environmental Consulting Services (54162); and Other Scientific and Technical Consulting Services (54169).

**Management, scientific and technical consulting—Revenues and expenses (all firms), 1998**

| | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|
| | | $ millions | | % |
| Management consulting | 5,736 | 1,911 | 4,451 | 22 |
| Scientific and technical consulting | 940 | 312 | 753 | 20 |
| **Total** | **6,676** | **2,223** | **5,204** | **22** |

*Source: Survey of Management, Scientific and Technical Consulting*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Personal Services (812)

Establishments provide personal care services, funeral services, laundry services and other services, such as pet care and photo finishing. Operators of parking facilities are also included.

**Personal services—Revenues and expenses (all firms), 1998**

| | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|
| | | $ millions | | % |
| Personal care services | 2,487 | 1,004 | 2,249 | 10 |
| Funeral services | 1,170 | 338 | 1,050 | 10 |
| Laundry services | 1,481 | 567 | 1,379 | 6 |
| Other personal services | 1,169 | 268 | 1,070 | 8 |
| **Total** | **6,306** | **2,176** | **5,747** | **9** |

*Source: Survey of Personal Services*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Real Estate Rental and Leasing and Property Management Services

This industry comprises Lessors of Residential Buildings and Dwellings (except Social Housing Projects) (531111); Lessors of Non-Residential Buildings (except Mini-Warehouses) (531120); Self-Storage Mini-Warehouses (531130); Lessors of Other Real Estate Property (531190); and Real Estate Property Managers (531310).

**Real estate rental and leasing and property management industry*—Revenues and expenses, 1998**

| | Establish-ments | Revenues | Salaries, wages and benefits | Total expen-ses |
|---|---|---|---|---|
| | No. | | $ millions | |
| **Canada** | **66,588** | **31,086** | **2,508** | **26,680** |
| Newfoundland | 587 | 155 | 32 | 133 |
| Prince Edward Island | 274 | 81 | 11 | 71 |
| Nova Scotia | 1,417 | 540 | 68 | 439 |
| New Brunswick | 1,171 | 358 | 26 | 326 |
| Quebec | 15,799 | 7,672 | 532 | 6,646 |
| Ontario | 24,336 | 12,794 | 907 | 10,923 |
| Manitoba | 1,847 | 697 | 70 | 618 |
| Saskatchewan | 1,831 | 574 | 81 | 503 |
| Alberta | 6,772 | 2,660 | 243 | 2,226 |
| British Columbia | 12,286 | 5,467 | 505 | 4,718 |
| Yukon | 97 | 23 | 4 | 20 |
| Northwest Territories | 171 | 65 | 17 | 56 |

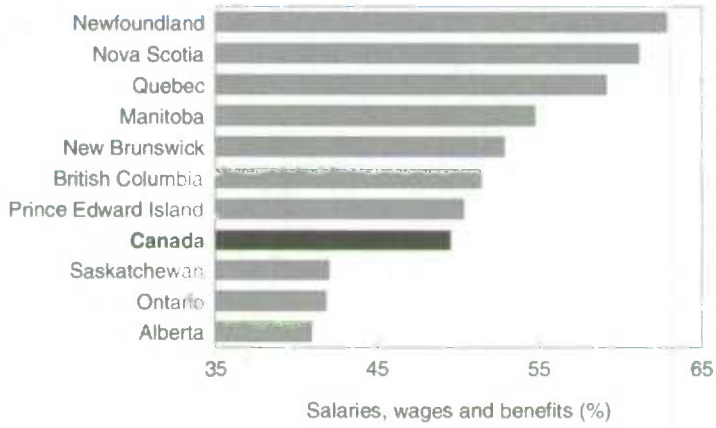
*Source: Survey of Real Estate Rental and Leasing and Property Management Service Industry*

* *Excludes social housing.*

## Real Estate Agents, Brokers, Appraisers and Other Real Estate Activities

Establishments primarily engaged in renting, buying and selling real estate for others on a fee or commission basis. These establishments assist vendors by advertising and listing properties and conducting open houses for prospective buyers, assist prospective buyers by selecting, visiting and making purchase offers. They may also rent or lease properties on behalf of clients (531210). They may also appraise the value of real estate and prepare appraisal reports for creditors, insurance companies, courts, buyers, sellers or auctioneers (531320).

**Real estate appraisers—Salaries, wages and benefits as a percentage of total expenses**




*Source: Survey of the Real Estate Agents, Brokers, Appraisers and other Real Estate Activities Industries, 1998*

## Software Development and Computer Services

This survey collects data from businesses engaged in providing computer systems design and related services (541510), data processing services (514210), on-line information services (514191), and software publishing (511210) in Canada.

**Computer systems design and related services—Employees and salaries, wages and benefits, 1998**

| | Firms | Employees | Salaries, wages and benefits |
|---|---|---|---|
| | | No. | $ millions |
| **Canada** | **31,651** | **82,478** | **4,468** |
| Newfoundland | 90 | 556 | 28 |
| Prince Edward Island | 22 | 92 | 3 |
| Nova Scotia | 298 | 760 | 41 |
| New Brunswick | 210 | 1,223 | 74 |
| Quebec | 5,606 | 21,790 | 1,024 |
| Ontario | 16,746 | 39,585 | 2,249 |
| Manitoba | 399 | 1,084 | 53 |
| Saskatchewan | 440 | 1,209 | 73 |
| Alberta | 4,228 | 9,494 | 543 |
| British Columbia | 3,580 | 6,653 | 377 |
| Yukon | 15 | 13 | 1 |
| Northwest Territories | 19 | 19 | 1 |

*Source: Survey of Software Development and Computer Services*

## Specialized Design Services

This industry is composed of establishments engaged primarily in Landscape Architectural Services (541320); Interior Design Services (54141); Industrial Design Services (54142); Graphic Design Services (54143); and Other Specialized Design Services (54149).

**Specialized design services—Revenues and expenses (all firms), 1998**

| | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|
| | | $ millions | | % |
| Landscape architecture | 119 | 50 | 98 | 18 |
| Interior design | 377 | 108 | 308 | 18 |
| Industrial design | 116 | 37 | 93 | 20 |
| Graphic design | 871 | 263 | 730 | 16 |
| Other specialized design | 80 | 21 | 65 | 19 |
| **Total** | **1,563** | **478** | **1,300** | **17** |

*Source: Survey of Specialized Design*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Surveying and Mapping Services

Establishments primarily engaged in Geophysical Surveying and Mapping Services (54136) and Surveying and Mapping (except Geophysical) Services (54137).

**Surveying and mapping services—Revenues and expenses, 1998**

| | Establishments | Revenues | Salaries, wages and benefits | Operating expenses |
|---|---|---|---|---|
| | No. | | $ millions | |
| **Canada** | **2,743** | **1,200** | **481** | **1,094** |
| Newfoundland | 49 | 11 | 5 | 11 |
| Prince Edward Island | 9 | 2 | 1 | 2 |
| Nova Scotia | 107 | 26 | 12 | 21 |
| New Brunswick | 60 | 15 | 6 | 13 |
| Quebec | 547 | 116 | 49 | 97 |
| Ontario | 408 | 217 | 102 | 200 |
| Manitoba | 38 | 12 | 4 | 9 |
| Saskatchewan | 83 | 36 | 16 | 33 |
| Alberta | 970 | 639 | 238 | 601 |
| British Columbia | 458 | 122 | 48 | 103 |
| Territories | 15 | 5 | 2 | 4 |

*Source: Survey of Surveying and Mapping Services*

## Travel Arrangement and Reservation Services (5615)

This survey collects detailed characteristics such as client base, revenue by type of service, detailed expenses items and employment data from retail travel agencies, tour operators, wholesalers, and other miscellaneous service industries in Canada.

**Travel arrangement and reservation services—Revenues and expenses (all firms), 1998**

| | Establishments | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|---|
| | No. | | $ millions | | % |
| Travel agencies | 5,057 | 1,778 | 653 | 1,658 | 7 |
| Tour operators | 1,022 | 4,255 | 229 | 4,063 | 5 |
| **Total** | **6,079** | **6,034** | **882** | **5,721** | **5** |

*Source: Survey of Travel Arrangement and Reservation Services*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

## Traveller Accommodation (721)

Establishments such as hotels, motels, resorts, bed and breakfasts, outfitters, camping grounds, and other establishments providing accommodation for travellers.

**Accommodation service industries—Revenues and expenses (all firms), 1998**

| | Establishments | Revenues | Salaries, wages and benefits* | Operating expenses | Profit before taxes** |
|---|---|---|---|---|---|
| | No. | | $ millions | | % |
| Hotels and motor hotels | 5,283 | 8,904 | 2,645 | 7,873 | 12 |
| Motels | 4,054 | 1,129 | 292 | 990 | 12 |
| Other accommodation | 6,584 | 1,245 | 335 | 1,152 | 7 |
| **Total** | **15,921** | **11,278** | **3,272** | **10,015** | **11** |

*Source: Survey of Traveller Accommodation*

* *Fees paid to contract employees are not included.*

** *Total revenue less total operating expenses expressed as a percentage of total revenue. Includes both the profits of incorporated businesses and the undistributed income of unincorporated partnerships and proprietorships. This undistributed income includes the unpaid remuneration of owners and partners, hence the estimate for profits will be higher in industries where unincorporated businesses are significant contributors.*

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